

HRHD4+, HRHD9+, HRHD16+

**4-, 9-, and 16-Channel Models
Digital Video Recorder**

User Guide

Revisions

Issue	Date	Revisions
1.00	11/04	New document.
1.01	04/05	Update contact info and correct PTZ control section.
2.00	07/05	Add Waste Electrical Equipment warning.
3.00	08/05	<p>Added new subsections under Chapter 3, Config: Network Setup: DVRNS Setup and Callback Center Setup.</p> <p>Added new functionality to Menu button in Chapter 4, Operation</p> <p>Removed Review Video Clips appendix</p> <p>Added new figures: System Information Change - Language; Port Number Setup, LAN (DHCP) Setup; LAN (ADSL Setup), DVRNS Setup, PTZ Menu, PTZ Speed Controller; revised figures: Quick Setup, System Information, System Information Change, Alarm In Event Action (Alarm Out) Setup, LAN Setup, Archive Setup, Search menu, Appendix D: Map of Screens.</p> <p>Minor changes throughout.</p>
3.01	10/05	New section LAN (ADSL) Setup & new figure 3-47 LAN (ADSL) Setup to Chapter 3, Configuration.

FCC Compliance Statement

INFORMATION TO THE USER: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This digital apparatus complies with Canadian ICES-003.

Cet appareil numérique est conforme à la norme NMB-003 du Canada.

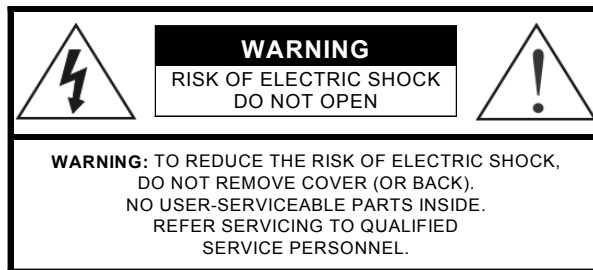
Explanation of Graphical Symbols



This symbol alerts the user to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



This symbol alerts the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.



WEEE (Waste Electrical and Electronic Equipment)

Correct Disposal of this Product (Applicable in the European Union and other European countries with separate collection systems)



This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.

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About This Document

This document introduces the HRHD+ Series Digital Video Recorder (DVR) and describes how to install, configure, and operate the DVR.

This guide covers the 4-, 9-, and 16-channel HRHD+ Series DVRs. The DVRs are identical except for the number of cameras and alarms that can be connected and the number of cameras that can be displayed. For simplicity, the illustrations and descriptions in this guide refer to the 16-camera model.

Overview of Contents

This document contains the following chapters and appendices:

- *Chapter 1, Introduction*, introduces the HRHD+ Series DVR, lists the features, and gives a functional overview of the components.
- *Chapter 2, Installation*, describes how to install the DVR and connect the system components.
- *Chapter 3, Configuration*, provides an overview of the front panel controls and LCD displays and provides instructions for configuring the DVR.
- *Chapter 4, Operation*, covers live monitoring, recording video and audio, playing recorded video, and searching for video.
- *Appendix A, USB Hard Disk Drive Preparation*, shows how to prepare the USB hard disk drive for computers using Microsoft® Windows® 2000/98 operating systems.
- *Appendix B, Solutions*, provides answers for common technical issues.
- *Appendix C, Connector Pinouts*, describes I/O and RS485 connector pinouts.
- *Appendix D, Map of Screens*, provides a graphical illustration of the menu screens.
- *Appendix E, Specifications*, lists the DVR specifications.

Important Safeguards

1. Read Instructions

All the safety and operating instructions should be read before the appliance is operated.

2. Retain Instructions

The safety and operating instructions should be retained for future reference.

3. Cleaning

Unplug this equipment from the wall outlet before cleaning it. Do not use liquid aerosol cleaners. Use a damp soft cloth for cleaning.

4. Attachments

Never add any attachments and/or equipment without the approval of the manufacturer as such additions may result in the risk of fire, electric shock, or other personal injury.

5. Water and/or Moisture

Do not use this equipment near water or in contact with water.

6. Accessories

Do not place this equipment on an unstable cart, stand, or table. The equipment may fall, causing serious injury to a child or adult, and serious damage to the equipment. Wall or shelf mounting should follow the manufacturer's instructions, and should use a mounting kit approved by the manufacturer.



This equipment and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the equipment and cart combination to overturn.

7. Power Sources

This equipment should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power, please consult your equipment dealer or local power company.

8. Power Cords

Operator or installer must remove power, BNC, alarm, and other connections before moving the equipment.

9. Lightning

For added protection for this equipment during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the equipment due to lightning and power-line surges.

10. Overloading

Do not overload wall outlets and extension cords to avoid the risk of fire or electric shock.

11. Objects and Liquids

Never push objects of any kind through openings of this equipment as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the equipment.

12. Servicing

Do not attempt to service this equipment yourself. Refer all servicing to qualified service personnel.

13. Damage Requiring Service

Unplug this equipment from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- When the power-supply cord or the plug has been damaged
- If liquid is spilled or objects have fallen into the equipment
- If the equipment has been exposed to rain or water
- If the equipment does not operate normally by following the operating instructions, adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the equipment to its normal operation.
- If the equipment has been dropped or the cabinet damaged
- When the equipment exhibits a distinct change in performance—this indicates a need for service.

14. Replacement Parts

When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

15. Safety Check

Upon completion of any service or repairs to this equipment, ask the service technician to perform safety checks to determine that the equipment is in proper operating condition.

16. Field Installation

This installation should be made by a qualified service person and should conform to all local codes.

17. Correct Batteries

WARNING! Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

18. Operating Temperature

An operating temperature range is specified (see *Appendix E, Specifications*) so that the customer and installer may determine a suitable operating environment for the equipment.

19. Elevated Operating Ambient Temperature

If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the specified operating temperature range.

20. Reduced Air Flow

Installation of the equipment in the rack should be such that the amount of airflow required for safe operation of the equipment is not compromised.

21. Mechanical Loading

Mounting of the equipment in the rack should be such that a hazardous condition is not caused by uneven mechanical loading.

22. Circuit Overloading

Consideration should be given to connection of the equipment to supply circuit and the effect that overloading of circuits might have on over-current protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

23. Reliable Earthing (Grounding)

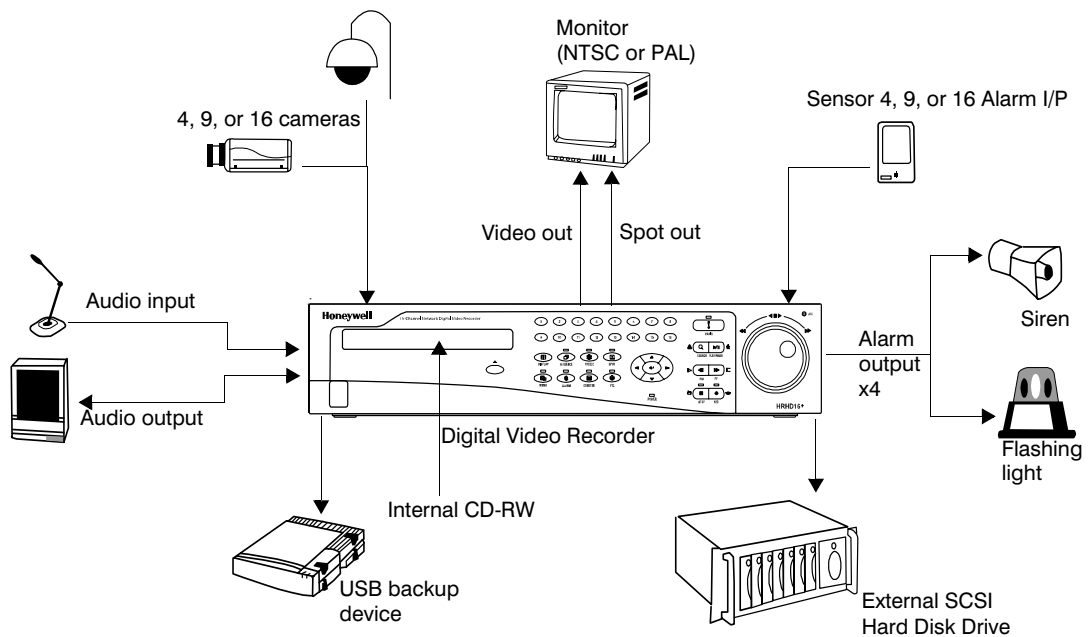
Reliable grounding of rack mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (for example, use of power strips).

Introduction

Features

Your color digital video recorder (DVR) provides recording capabilities for 4-, 9-, or 16-camera inputs. It provides exceptional picture quality in both live and playback modes, and offers the following features:

- 4-, 9- or 16-Composite Input Connectors (model dependent)
- Compatible with Color (NTSC or PAL) and B&W (CCIR and EIA-170) video sources
- Multiple search engines (Date/Time, Calendar, Event)
- Records up to 60 NTSC images per second (50 PAL images per second)
- Loop-through video connectors
- Continuous recording in Disk Overwrite mode
- Video archiving via Ultra SCSI Interface
- Continues recording while archiving, transmitting to a remote site, and during playback
- User-friendly Graphical User Interface (GUI) menu system
- Two record modes (Time and Event)
- Audio recording and playback
- Alarm connections include: Input, Output, and Reset Input
- Built-in alarm buzzer
- Live or recorded video access via Ethernet or modem

Figure 1-1 Typical DVR Installation

Technical Overview

Your DVR can replace both a time-lapse VCR and a multiplexer in a security installation. However, it has many features that make it much more powerful and easier to use than even the most advanced VCR.

The DVR converts analog NTSC or PAL video to digital images and records them on a hard disk drive. Using a hard disk drive allows you to access recorded video almost instantaneously; there is no need to rewind tape. The technology also allows you to view recorded video while the DVR continues recording video.

Digitally recorded video has several advantages over analog video recorded on tape. There is no need to adjust tracking. You can freeze frames, fast forward, fast reverse, slow forward, and slow reverse without risk or image streaking or tearing. Digital video can be indexed by time or events and you can instantly view video after selecting the time or event.

Your DVR can be set up for event or time-lapse recording. You can define times to record and the schedule can change for different days of the week and user defined holidays.

Introduction

The DVR can be set up to alert you when the hard disk drive is full or it can be set up to record over the oldest video after the disk is full.

Your DVR uses a proprietary encryption scheme making it nearly impossible to alter video.

You can view video and control your DVR remotely by connecting via modem or Ethernet. You can use the SCSI port to record or archive video to external hard disk drives or one of the two USB ports to upgrade the system or copy video clips to an external CD-RW drive, external hard disk drive, or Flash drives.

Installation

This chapter covers how to:

- Set the DVR for NTSC or PAL
- Connect the DVR to peripheral equipment

Package Contents

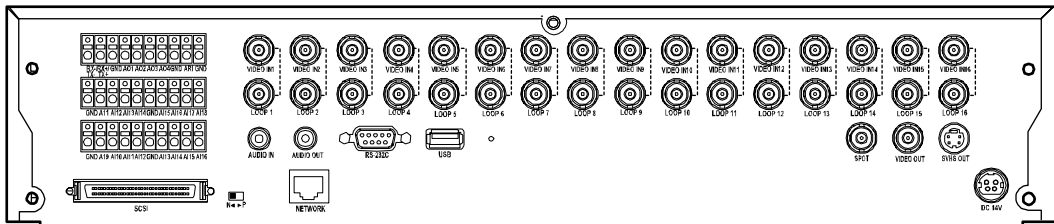
The package contains, in addition to this document:

- Digital Video Recorder
- Adapter (including power cord)
- Multilingual User Guide on CD-ROM
- RAS User Guide
- Multilingual RAS Software and *Remote Administration System (RAS) User Guide* on CD-ROM
- Rack-mount Kit
- Assembly screws for adding hard disk drives

Required Installation Tools

No special tools are required to install the DVR. Refer to the installation manuals for the other items that make up part of your system.

Figure 2-1 DVR Rear Panel (16-Channel Shown)



Setting Unit for NTSC or PAL

Figure 2-2 NTSC/PAL Switch



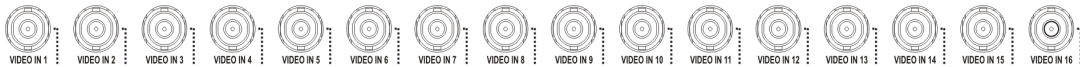
You can use your DVR with either NTSC or PAL equipment. Before turning on the DVR, set the switch to NTSC or PAL to match your equipment.

Note You cannot mix NTSC and PAL equipment. For example, you cannot use a PAL camera and an NTSC monitor.

Caution If you set the switch from NTSC (PAL) to PAL (NTSC), please do the Factory Reset and Clear All Data. If not, it causes the DVR to perform wrong operations.

Connecting the Video Source

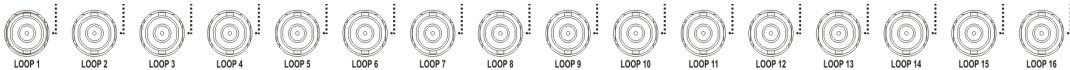
Figure 2-3 Video Input Connectors



Connect the coaxial cables from the video sources to the BNC Video In connectors.

Connecting the Loop Through Video

Figure 2-4 Video Loop Through Connectors

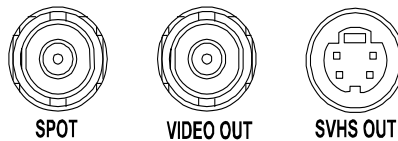


If you would like to connect your video source to another device, you can use the Loop BNC connectors.

Note The Loop BNC connectors are auto terminated. Do **not** connect a cable to the Loop BNC unless it is connected to another terminated device because it will cause poor quality video.

Connecting the Monitor

Figure 2-5 Video Out Connectors



1. Connect the monitor to either the Video Out or SVHS Out connector.
2. Connect the spot monitor to the Spot connector, if required.

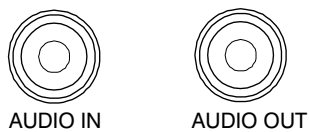
Note If your monitor has an SVHS input, use it to give you better quality video display.

Note The Video Out (BNC) and the SVHS Out connectors may be connected to individual monitors for simultaneous operation.

Connecting Audio

Note It is the user's responsibility to determine if local laws and regulations permit recording audio.

Figure 2-6 Audio In and Out Connectors



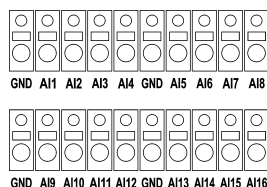
Your DVR can record audio.

1. Connect the audio source to Audio In.
2. Connect Audio Out to your amplifier.

Note The DVR does not have amplified audio output, so you need a speaker with an amplifier. The audio input can be from an amplified source or directly from a microphone.

Connecting Alarms

Figure 2-7 Alarm Input Connector Strips



To make connections on the Alarm Connector Strip:

1. Press and hold the button.
2. Insert the wire in the hole below the button.
3. After releasing the button, tug gently on the wire to make certain it is connected.
4. To disconnect a wire, press and hold the button above the wire and pull out the wire.

AI 1 to 16 (Alarm In)

You can use external devices to signal the DVR to react to events. Mechanical or electrical switches can be wired to the AI (Alarm In) and GND (Ground) connectors. The threshold voltage is 4.3V and should be stable at least 0.5 seconds to be detected. See *Chapter 3, Configuration* for configuring alarm input.

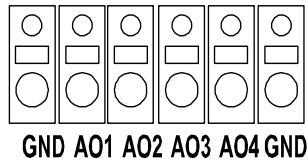
GND (Ground)

Note All the connectors marked GND are common.

Connect the ground side of the Alarm input and/or Alarm output to the GND connector.

AO 1 TO 4 (Alarm Out)

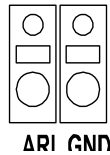
Figure 2-8 Alarm Output Connector Strips



The DVR can activate external devices such as buzzers or lights. Connect the device to the AO (Alarm Out) and GND (Ground) connectors. AO is an active low open collector output which sinks 5mA@12V and 30 mA@5V. See *Chapter 3, Configuration* for configuring alarm output.

ARI (Alarm Reset In)

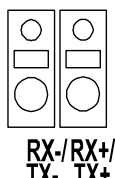
Figure 2-9 Alarm Reset Input Connector Strips



An external signal to the Alarm Reset In (ARI) can be used to reset both the Alarm Out signal and the DVR internal buzzer. Mechanical or electrical switches can be wired to the ARI (Alarm Reset In) and GND (Ground) connectors. The threshold voltage is below 0.3V and should be stable at least 0.5 seconds to be detected. Connect the wires to the ARI (Alarm Reset In) and GND (Ground) connectors.

Connecting to the RS485

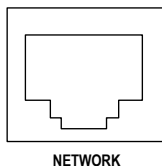
Figure 2-10 RS485 Connector



You can control the DVR remotely by an external device or control system, such as a control keyboard, using RS485 half-duplex serial communications signals. The RS485 connector can also be used to control PTZ (pan, tilt, zoom) cameras. Connect RX-/TX- and RX+/TX+ of the control system to the TX-/RX- and TX+/RX+ (respectively) of the DVR. See *Chapter 3, Configuration* and the PTZ camera or remote controller manufacturer's manual for configuring the RS485 connection.

Connecting to the Network Port

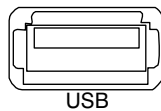
Figure 2-11 Network Connector



The DVR can be networked using the 10/100Mb Ethernet connector. Connect a CAT5 cable with an RJ45 jack to the DVR connector. The DVR can be networked with a computer for remote monitoring, searching, configuration, and software upgrades. See *Chapter 3, Configuration* for configuring the Ethernet connections.

Connecting to the USB Port

Figure 2-12 USB Connector

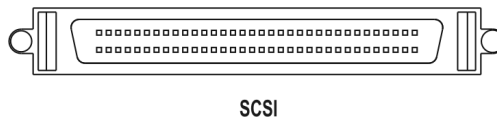


Use the two USB ports to connect external hard disk drives, CD-RW or Flash drives for clip copy or system upgrade.

1. Position the external hard disk drive close enough to the DVR so that you can make the cable connections, usually less than 6 feet (1.83 m).
2. Use the USB cable provided with the hard disk drive to connect it to the DVR.

Connecting to the Ultra Wide SCSI Port

Figure 2-13 SCSI Connector



A SCSI port is provided to connect external storage devices for recording or archiving video. Connect the external SCSI hard disk drive (RAID) cable to the high-density 68-pin female UltraWide SCSI port. The length of SCSI cable should not exceed 1.5 meters. You can connect up to four UltraWide SCSI devices with SCSI IDs set to 0, 1, 2, and 3 respectively.

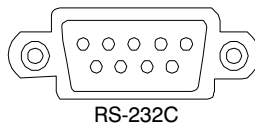
Note The SCSI bus must be terminated properly, otherwise the DVR will not operate properly.

Caution Do NOT connect the SCSI device while the SCSI DVR power is on. The DVR must be powered down to connect the SCSI device and powered up again after the SCSI device has been connected. Power up the SCSI device so it is ready for operation in advance of powering up the DVR.

Caution If the SCSI device is shut down while the device is operating, the DVR system may not work normally.

Connecting to the RS232 Port

Figure 2-14 RS232 Connector

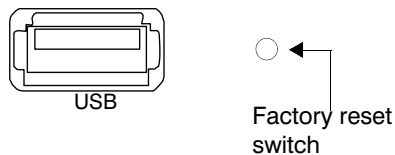


An RS232 port is provided to connect an external modem for remote monitoring, configuration and software upgrades, and to connect a remote control keyboard. Use a modem cable with a DB-9S (female) connector to connect to the DVR. See [Chapter 3, Configuration](#) for configuring the modem.

Note The DVR is not supplied with a modem cable, and many modems are not supplied with cables. Make certain you have the correct cable when purchasing the modem.

Factory Reset

Figure 2-15 **Factory Reset Switch**



The DVR has a Factory Reset switch to the right of the USB port. This switch will only be used on the rare occasions that you want to return all the settings to the original factory settings.

Caution When using the Factory Reset, you will lose any settings you have made. If you wish to use the same DVR name registered on the DVRNS server (see *DVRNS (DVR Name Service) Setup Screen, page 68*) after initializing the system using the factory reset, you need to contact the DVRNS server manager. Please record and save the help desk information before performing a factory reset.

To reset the unit, you need a straightened paper clip:

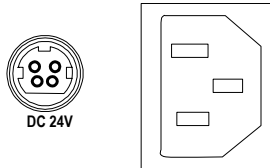
1. Turn the DVR off.
2. Turn it on again.
3. While the DVR is initializing, poke a straightened paper clip in the unlabeled hole to the right of the USB port.
4. Hold the switch until all the LEDs on the front panel are lit.

Note When the DVR successfully resets to factory defaults all the LEDs on the front panel flash three times.

5. Release the reset switch. All of the DVR settings are now at the original settings it had when it left the factory.

Connecting the Power Cord

Figure 2-16 Power Cord Connector



1. Connect the DC power cord of the adapter to the DVR.
2. Connect the AC power cord to the adapter and then to the wall outlet.

Note The power cord connector locks into position to prevent accidental power loss. Be sure to slide the release away from the socket before removing the plug.

WARNING! Route power cords so they are not a tripping hazard. Make certain the power cord will not be pinched or abraded by furniture. Do not install power cords under rugs or carpet.

The power cord has a grounding pin. If your power outlet does not have a grounding pin receptacle, do not modify the plug.

Do not overload the circuit by plugging too many devices in to one circuit.

Your DVR is now ready to operate. See [Chapter 3, Configuration](#) and [Chapter 4, Operation](#).

Configuration

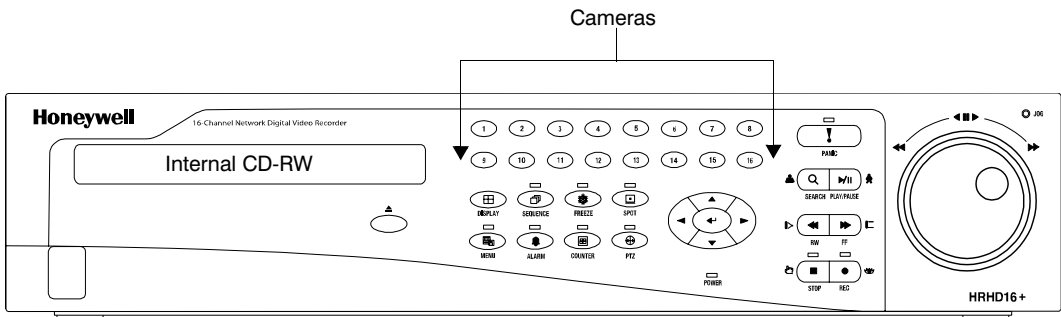
This chapter covers the following topics:

- Front panel controls and LEDs
- Initial unit setup
- Configuring input devices
- Configuring recording settings
- Configuring event action
- Configuring on-screen display
- Configuring network setup
- Configuring password setup

Note **Ensure that your DVR is completely installed before proceeding.** See *Chapter 2, Installation*.

Front Panel Controls

Figure 3-1 DVR Front Panel (16-Channel DVR Shown)



The front panel looks and operates much like a VCR combined with a multiplexer. Many of the buttons have multiple functions. [Table 3-1](#) describes each button and control. Take a few minutes to review the descriptions. You will use these to initially set up your DVR and for daily operations.

Table 3-1 Front Panel Controls

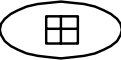
Front panel control	Press the button to ...
Camera buttons (1-16)	Cause the selected camera to display full screen. These buttons are also used to enter passwords. Note The 4-channel DVR has 4 camera buttons; the 9-channel DVR has 9 camera buttons.
DISPLAY  DISPLAY	Toggle between different display formats. The available formats are: 4x4, 3x3, 2x2 and PIP (Picture-in-picture). Note The display button does not toggle to the full screen display. Press a camera button to display video from that camera at full screen.

Table 3-1 Front Panel Controls



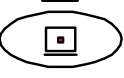




Front panel control	Press the button to ... (cont'd)
SEQUENCE buttons  SEQUENCE	<p>When in Live mode, display another full live channel sequentially.</p> <p>When in one of the multi-view formats, cause the DVR to sequence cameras in two sequence modes:</p> <p>Page mode: In Page mode, the DVR sequences through user-defined screen layouts (pages).</p> <p>Cameo mode: In Cameo mode, the bottom, right screen displays live cameras sequentially. Press DISPLAY and SEQUENCE to access Cameo mode. Turn Cameo sequencing on and off in the Main Monitor setup screen (see <i>Main Monitoring Setup Screen</i>, page 59).</p> <p>While in Sequence mode pressing SEQUENCE again will exit the Sequence mode.</p>
FREEZE  FREEZE	<p>Freeze the current live screen.</p>
SPOT  SPOT	<p>SPOT + the individual camera buttons display the selected camera on the spot monitor. For the sequence display on the spot monitor, press SPOT + SEQUENCE.</p>
MENU  MENU	<p>Use to:</p> <ul style="list-style-type: none"> • Enter the Normal Setup screen. You must enter the administrator password to access the Normal Setup. • Close the current menu or setup dialog box. • Access the Clip Copy menu. Pressing and holding the button while in Playback mode enters the Clip Copy screen. • Close the current menu or setup dialog box.
ALARM  ALARM	<p>The ALARM button has two functions. First, it resets the DVR outputs including the internal buzzer during an alarm. Second, it displays the event log when you are in the Live Monitoring mode unless there is an active alarm. This operation can be user password protected.</p>
COUNTER  COUNTER	<p>Switch between displaying the remaining storage capacity on the screen.</p>
PTZ  PTZ	<p>Open a Pan/Tilt/Zoom screen which allows you to control properly configured cameras.</p>

Table 3-1 Front Panel Controls

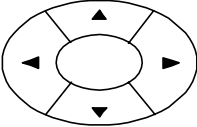
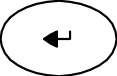



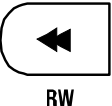

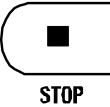

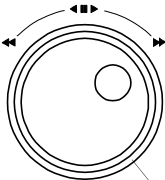
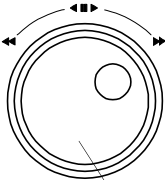
Front panel control	Press the button to ... (cont'd)
Up, Down, Left, Right Arrows 	Use to: <ul style="list-style-type: none"> • Navigate through menus and GUI • Control Pan and Tilt when in the PTZ mode • Move the position of the active cameo screen • Move through screen pages
ENTER 	<ul style="list-style-type: none"> • Select a highlighted item or complete an entry that you have made during system setup. • Enter or exit the active cameo mode during live monitoring and playback.
PANIC 	Start panic recording of all camera channels with Very High recording quality and speed, and displays ! on the screen. Pressing the button again stops panic recording. This operation can be user password protected.
SEARCH 	<ul style="list-style-type: none"> • Display the Search menu. Pressing the button again exits the Search menu. This operation can be user password protected. • Zoom in when in PTZ mode
PLAY/PAUSE 	<ul style="list-style-type: none"> • Play back images at regular speed. Pressing the button while in Playback mode pauses the video. The screen displays ▶ when the DVR is playing back video. The screen displays when in Pause mode. • Zoom out in PTZ mode <p>Entering Playback mode from Live Monitoring mode can be user password protected.</p>
RW (Rewind) 	<ul style="list-style-type: none"> • Play video backwards at high speed. Pressing RW again toggles the playback speed from: ◀◀, ◀◀◀, and ◀◀◀◀. The screen displays ▶▶, ▶▶▶, and ▶▶▶▶ respectively. • Control far focus in PTZ mode • Entering Fast Backward Playback mode from Live Monitoring mode can be user password protected.
FF (Fast Forward) 	<ul style="list-style-type: none"> • Play video forward at high speed. Pressing FF again toggles the playback speed from: ▶▶, ▶▶▶, and ▶▶▶▶. The screen displays ▶▶, ▶▶▶, and ▶▶▶▶ respectively. • Control near focus in PTZ mode <p>Entering Fast Playback mode from Live Monitoring mode can be user password protected.</p>
STOP 	<ul style="list-style-type: none"> • Pressing STOP during Playback mode returns the DVR to Live Monitoring mode. • Save Preset in PTZ mode • Control pan and tilt speed in PTZ mode

Table 3-1 Front Panel Controls

Front panel control	Press the button to ... (cont'd)
REC (Record)  REC	<ul style="list-style-type: none">Set the DVR so that it is ready to record video. A red dot appears on the screen when the DVR is recording video. Press REC again to stop recording video. This operation can be an admin password protected.Load a Preset View in PTZ mode
Shuttle Ring  Shuttle Ring	<p>The Shuttle Ring only functions in Playback mode. The Shuttle Ring is spring loaded. When released, the video pauses and the ring returns to the center position. Turn the ring clockwise to play video forward. Turn the ring counterclockwise to play video backward.</p> <p>Playback speed varies with the amount the ring is turned. The playback speeds are ◀x0.5, ◀◀, ◀◀◀, ◀◀◀◀, ▶x0.5, ▶▶, ▶▶▶, and ▶▶▶▶.</p>
Jog Dial  Jog Dial	<p>The Jog Dial only functions when playback video has been paused. Turn the Jog Dial clockwise to play video forward image-by-image. Turn the Jog Dial counterclockwise to play video backward image-by-image.</p>

Turning on the Power

Connect the power cord to the DVR to turn on the unit. The DVR takes approximately 60 seconds to initialize.

Initial Unit Setup

Before using your DVR for the first time, you should establish the initial settings. This includes items such as time and date, display language, camera, audio, remote control, record mode, network and password. Your DVR can be set up using various screens and dialog boxes.

1. Press **MENU** to enter the setup screens. The Admin Password screen displays.

Figure 3-2 Admin Password Screen

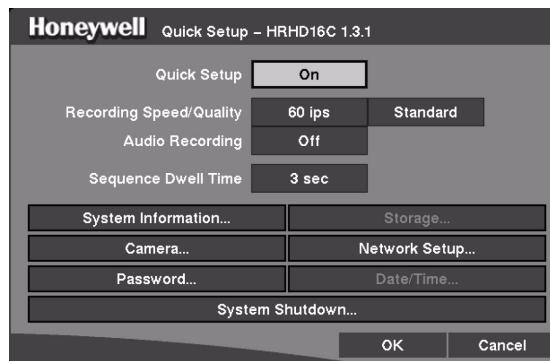


2. Enter the password by pressing the appropriate combination of Camera number buttons and then Enter (↵). The factory default password is 4321. There are two Setup screens: Quick Setup and Normal Setup. The factory default is the Quick Setup screen.

Note The setup screens can also be accessed by entering the User password if the User password is turned on. However, only access to the Clip Copy and Password setup screens is permitted.

Quick Setup Screen

Figure 3-3 Quick Setup Screen



Use the Quick Setup screen to set up the most commonly used features of your DVR. Use the Arrow buttons to move through the options. Pressing \leftarrow lets you make your selections.

Note If you enter the Quick Setup screen by entering the User password, only Password setup is permitted.

1. Highlight the box beside **Quick Setup** and press \leftarrow to toggle between On and Off. If you select **Off**, you will use the Normal Setup screen to change the DVR settings.
2. Highlight the **Recording Speed** box and select recording speeds from as few as one image every 10 seconds to as fast as 60 ips.

Note The DVR has a maximum recording speed of 60 ips per camera, however, the recording speed may not be achieved when averaged over all cameras.

3. Highlight the **Recording Quality** box and select one of the options:
Very High, High, Standard, Low
4. Highlight the box beside **Audio Recording** and select either **On** or **Off**.

Note It is the user's responsibility to determine if local laws and regulations permit recording audio.

5. Highlight the box beside **Sequence Dwell Time** and select from **3** to **60** seconds for the camera sequence dwell time.

 - Selecting **System Information...** enters a screen that allows you to set the site name, set the language, and view various system operational parameters.
 - Selecting **Storage Check...** enters a screen where you can check the storage status.

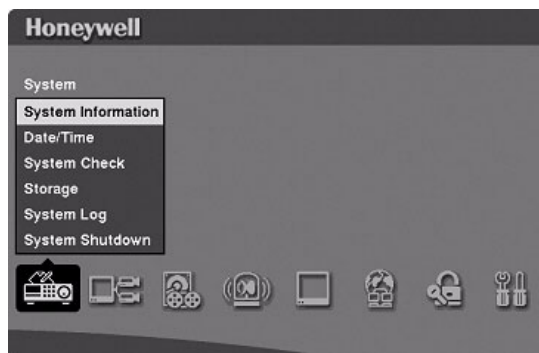
Note The Storage Check and Date/Time options may be greyed out (cannot be selected) if Quick Setup has just been enabled. To access these options, press **MENU** to exit the menu, then press it again to re-open the Quick Setup screen, with all options available.

- Selecting **Camera...** enters a screen where you can set up camera information.
- Selecting **Network Setup...** enters a screen where you can set up network information.
- Selecting **Password...** enters a screen where you will be able to change passwords.
- Selecting **Date/Time...** enters a screen where you will be able to set the DVR time and date.
- Selecting **System Shutdown...** shuts the DVR down. When shutting down the DVR, you need to confirm that you want to shut down the unit, you will be asked for an administrator password.

Note The Quick Setup mode releases automatically when the user changes the DVR settings remotely using the RAS (Remote Administration System) program.

Normal Setup Screen

Figure 3-4 Normal Setup Screen



Press **MENU** to enter the Normal Setup screen. If the Quick Setup screen displays, turn it off as described above. The Normal Setup screen gives you access to all the DVR setup screens. Use the Arrow buttons to select Menu options and move through the screen pages.

System Information

Use the System Information screen to:

- Name the site location
- Assign a unit ID number
- Select the language the screens are displayed in
- Upgrade the software

Highlight **System Information** (**Main Menu** ► **System** ► **System Information**) and then press **↵**. The System Information screen displays.

Figure 3-5 System Information Screen


1. Highlight **Change** and press \leftarrow . The System Information Change screen displays.


Figure 3-6 System Information Change Screen


2. Highlight the box beside **Site Description** and press \leftarrow . A virtual keyboard displays.

Figure 3-7 Virtual Keyboard

3. Use the Arrow buttons to highlight the first character you want in the **Site Title** field and then press \leftarrow . That character appears in the title bar and the cursor moves to the next position. You can use up to 20 characters including spaces in your title.

Press  to toggle between the upper and lower case keyboards.

Press  to backspace.

Press  to delete entered characters.

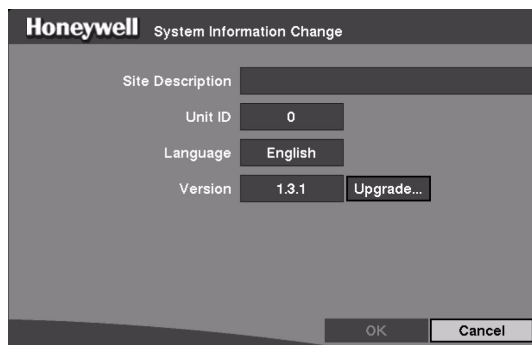
After you have entered your title, highlight **Close** and then press \leftarrow .

4. Highlight the box beside **Unit ID** and then press \leftarrow .

Change the number by highlighting it and using the Up and Down Arrow buttons or the Jog Dial to increase and decrease the number. The Unit ID number is used to identify the unit when it is networked with other DVRs.

Note You cannot use the same number for two or more DVRs that are within the same network.

5. Highlight the box beside **Language** and press \leftarrow . A drop-down list displays the available languages. Highlight the desired language and then press \leftarrow .



6. After you have created a title, assigned a unit ID number, and selected a language, you can save your changes by highlighting **OK** and pressing \leftarrow . Select **Cancel** to exit the screen without saving the changes.

Software Upgrade

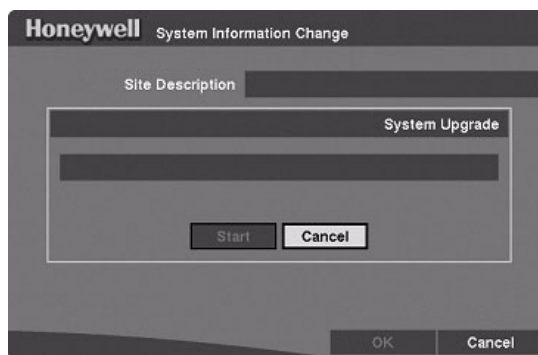
In the System Information Change screen, the box beside Version displays the software version of the DVR.

Note You can upgrade the software **only** in the System Information Change screen.

To upgrade the software:

1. Connect the USB device containing the upgrade package file to the DVR.
2. Highlight **Upgrade ...** and then press \leftarrow . The System Upgrade screen displays, showing the upgrade package file name.

Figure 3-8 System Upgrade Screen



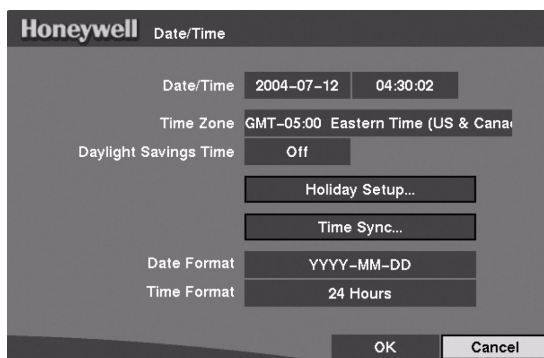
Caution System upgrade via USB port might **not** be completed properly if a USB device has been connected to the other USB port. Please remove any other USB device before system upgrade is attempted.

Note If the file system on the USB-IDE hard disk drive or USB Flash drive is **not** FAT16 or FAT32 format, format the drive using FAT16 or FAT32 format.

Date/Time Setup

Highlight **Date/Time** in the System menu (**MENU** ► **System** ► **Date/Time**) and then press **↵**. The Date/Time setup screen displays.

Figure 3-9 Date/Time Screen



Caution If you set a date and time that is older than some of your recorded images, any images with dates and times later than the new setting will be deleted.

1. Highlight the first box beside **Date/Time** and then press \leftarrow . The individual sections of the date highlight.

Use the Up and Down Arrow buttons or the Jog Dial to change the number. Use the Left and Right Arrow buttons to move between month, day and year.

After you have the correct date, press \leftarrow .

2. Highlight the second box beside **Date/Time** and press \leftarrow . The individual sections of the time will highlight. Use the Up and Down Arrow buttons or the Jog Dial to change the number. Use the Left and Right Arrow buttons to move between hour, minutes and seconds. After you have the correct time, press \leftarrow .

Note The clock will not start running until you have restarted the unit, so you may wish to set the time last.

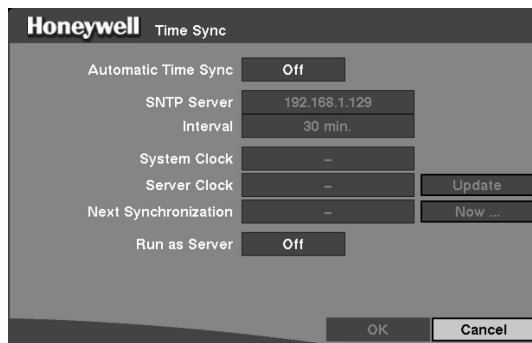
3. Highlight the box beside **Time Zone** and press \leftarrow . Select the time zone you are in from the list and press \leftarrow .
4. Highlight the box beside **Daylight Saving Time** and press \leftarrow . Pressing \leftarrow toggles between **On** and **Off**.
5. Highlight the **Holiday Setup...** box and press \leftarrow . You can set up holidays by highlighting **Add ...** and pressing \leftarrow . The current date displays.
6. Highlight the month and day and change them by using the Up and Down Arrow buttons. Press \leftarrow to add the date. Dates can be deleted by highlighting the X beside the date and pressing \leftarrow .

Note Holidays that do not fall on the same date each year should be updated after the current year's holiday has passed.

Figure 3-10 Holiday Setup Screen

To save your changes, highlight **OK** and then press **↵**. Select **Cancel** to exit the screen without saving the changes.

On the Date/Time screen, highlight the box beside **Time Sync ...** and then press **↵** to display the Time Sync screen. Use the Time Sync screen to set up time synchronization between the DVR and standard time servers that are available in most time zones and countries, or between two DVRs.

Figure 3-11 Time Sync Screen

Highlight the box beside **Automatic Time Sync** to toggle between **On** and **Off**.

Highlight the box beside **SNTP Server** and then press **↵**. Change the numbers by highlighting them and using the Up and Down Arrow buttons or the Jog Dial to increase or decrease the number.

Highlight the box beside **Interval** and then press **↵**. Set the time interval for synchronization from **30** to **300** minutes.

The box beside **System Clock** displays the DVR's time setting.

The box beside **Server Clock** displays the time setting of the time server. To update the server clock, highlight **Update** then press **↵**.

Note The Server Clock displays “ – ” when the DVR cannot load the time information from the time server.

The box beside **Next Synchronization** displays the time when the next synchronization is scheduled. To synchronize the time instantly, highlight **Now ...** and then press **↵**.

Caution When selecting **Now ...**, any video with a later time and date will be lost if the time and date of a time server is earlier than the last recorded image of the DVR.

Note When the time difference between the DVR and the time server is more than one minute, the DVR might not synchronize the time to prevent any unexpected loss of recorded video data. If you want to synchronize the time manually, select **Now ...**.

Highlight **Run as Server** and then press **↵** to toggle between **On** and **Off**. When it is **On**, the DVR you are setting up will run as a time server.

To save your changes, highlight **OK** and then press **↵**. Select **Cancel** to exit the screen without saving the changes.

Highlight the box beside **Date Format** and press **↵**. A list of date formats displays. Highlight the format you wish to use and then press **↵**. The choices are:

MM-DD-YYYY
DD-MM-YYYY
YYYY-MM-DD
MM/DD/YYYY
DD/MM/YYYY
YYYY/MM/DD

To change the time format, highlight the box beside **Time Format** and then press **↵**. The DVR toggles between **12 Hours (AM/PM)** and **24 Hours (military time)**.

To save your changes, highlight **OK** and then press **↵**. Select **Cancel** to exit the screen without saving the changes.

System Check Screen

Use the System Check screen to check the status (fault condition) of the DVR. Highlight **System Check** in the System menu (**MENU ► System ► System Check**) and then press **↵**. The System Check setup screen displays.

Figure 3-12 System Check Screen

Check Point	On/Off	Interval	Status
Record	On	1 Hour	Good
Alarm In 1	On	1 Hour	Good
Alarm In 2	On	1 Hour	Good
Alarm In 3	On	1 Hour	Good
Alarm In 4	On	1 Hour	Good

1 - 4 5 - 8 9 - 12 13 - 16

OK Cancel

1. Highlight the box under the **On/Off** heading and then press **↵**. This toggles between **On** and **Off**.

When it is **On**, the DVR reports a fault condition if it does not detect any recording or if there is an alarm during the designated time.

2. Highlight the box under the **Interval** heading and then press **↵**. A slide bar displays allowing you to set the check interval from **1 Hour** to **30 Days** by using the Left and Right Arrow buttons.
3. The **Status** field displays the fault conditions.

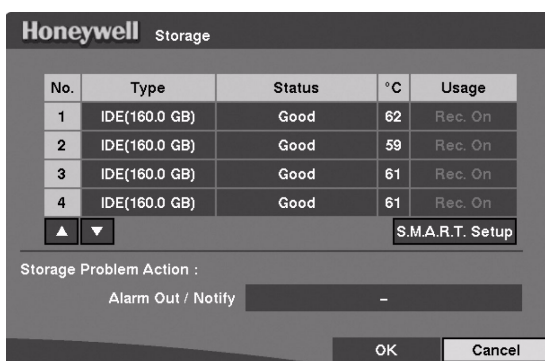
Good means that there was recording or an alarm occurred during the designated time.

Bad indicates that there was no recording or no alarm occurred during the designated time.

Storage Screen

Highlight **Storage** in the System menu (**MENU ► System ► Storage**) and then press **↵**. The Storage setup screen displays.

The DVR displays the storage status when the installed IDE hard disk drives support the S.M.A.R.T. (Self-Monitoring Analysis and Reporting Technology) monitoring program.

Figure 3-13 Storage Screen

Note When the DVR has more than four storage devices, you can scroll through the list by selecting the Up and Down arrows under the list.

The **Type** field displays the type and capacity of storage devices.

The **Status** field displays the device status or fault conditions. The choices are described as follows:

Table 3-2 Storage Screen Status Options

Status	Description
Good	The storage condition is normal.
Bad	Data cannot be written on or read from the storage device.
S.M.A.R.T. Inop.	Storage conditions are normal; however, the S.M.A.R.T. monitoring is not working or is not supported.
S.M.A.R.T. Alert	S.M.A.R.T. monitoring has detected a fault condition.
High Temperature	S.M.A.R.T. monitoring has detected that the storage device temperature exceeded the preset temperature threshold.
Not installed	The storage device is not installed.

Note After the S.M.A.R.T. Alert message displays, we recommend you replace the hard disk drive, usually within 24 hours.

The **C°** field displays the temperature of the storage device.

The **Usage** field displays the device usage.

Note When the device is an IDE hard disk drive, you can change its usage to either **Rec. On** or **Rec. Off**.

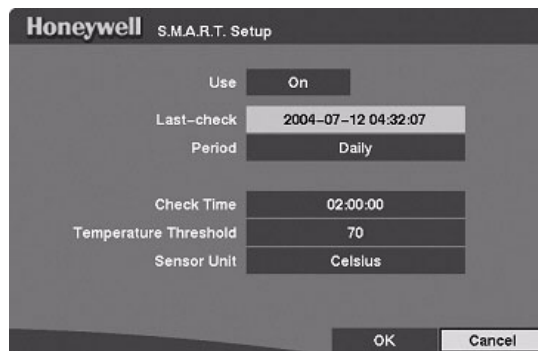
When the device is a SCSI hard disk drive, you can change its usage to either **Extension** or **Archive**.

Caution A “–” displays when connecting a hard disk drive that was previously used for something else. In this situation, device usage can be changed as desired usages; for example, Extension to Archive or Archive to Extension. **However, changing the device usage causes the stored data on the device to be lost.**

The DVR can be set to react to storage problems by activating an internal buzzer or external alarms, and/or notifying a remote site. Highlight the box beside **Storage Problem Action: Alarm Out/Notify** and then press **↵** to select from **Beep**, the alarm output terminal that you want to associate with the storage problem event, and/or **Notify**.

Highlight **S.M.A.R.T. Setup** and then press **↵**. The S.M.A.R.T. Setup screen displays.

Figure 3-14 S.M.A.R.T. Setup Screen



Your DVR shows the condition of the hard disk drives if the installed IDE hard disk drives support the S.M.A.R.T. program. Highlight the box beside **Use** and then press **↵** to toggle between **On** and **Off**.

The Last-check field displays the date and time information of the last storage check.

1. Highlight the box beside **Period** and select from **Daily**, **Weekly**, or **Monthly** for the check interval.

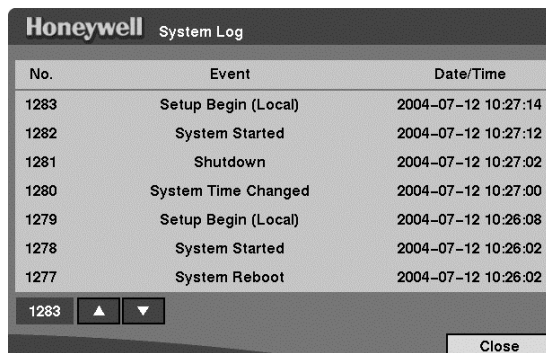
Note When selecting Weekly or Monthly, the Day of Week or Day of Month field displays under the Period field. Select the check day or date.

2. Highlight the box beside **Check Time** and adjust the numbers using the Arrow buttons or the Jog Dial.
3. Highlight the box beside **Temperature Threshold** and adjust the numbers using the Arrow buttons or the Jog Dial. Set the temperature number to the hard disk drive manufacturer specifications. If this temperature is ever exceeded, the S.M.A.R.T. Alert message displays.
4. Highlight the box beside **Sensor Unit** and select from **Celsius** or **Fahrenheit**.
5. To save you changes, highlight **OK** and then press \leftarrow . Select **Cancel** to exit the screen without saving the changes.

System Log Screen

Highlight **System Log** in the System menu (**MENU** \blacktriangleright **System** \blacktriangleright **Storage Log**) and then press \leftarrow . The System Log screen displays.

Figure 3-15 System Log Screen



No.	Event	Date/Time
1283	Setup Begin (Local)	2004-07-12 10:27:14
1282	System Started	2004-07-12 10:27:12
1281	Shutdown	2004-07-12 10:27:02
1280	System Time Changed	2004-07-12 10:27:00
1279	Setup Begin (Local)	2004-07-12 10:26:08
1278	System Started	2004-07-12 10:26:02
1277	System Reboot	2004-07-12 10:26:02

At the bottom of the screen, there is a highlighted event number '1283' with up and down arrow buttons, and a 'Close' button in the bottom right corner.

The System Log screen displays a record of various events logged by the DVR. The list shows the dates and times the system was turned On and Off, system was restarted, recording was started or stopped, playback was started or stopped, setup changes were made, and data banks were cleared.

The events are listed from the most recent to the oldest. To scroll through the list a page at a time, select the Up and Down Arrow buttons and then press \leftarrow . To go directly to an event number, highlight the event number box (left of the Up Arrow), press \leftarrow , use the Arrow buttons to change the number, and then press \leftarrow .

System Shutdown

Highlight **System Shutdown** in the System menu (**MENU ► System ► System Shutdown**) and then press **↵**. This shuts the DVR down. When shutting down the DVR, you need to confirm that you want to shut down the unit, and you will be asked for an administrator password.

Note To stop the system shutdown, reboot the DVR.

Configuring Input Devices

Use the Device menu (**MENU ► Device**) to configure the video, audio, and remote control devices connected to the DVR.

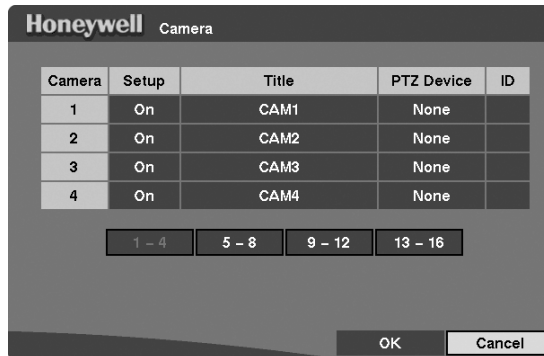
Figure 3-16 Device Menu



Camera Setup Screen

Use the Camera Setup screen to display camera inputs, hide the video, assign titles, and control PTZ cameras. Highlight **Camera** in the Device menu (**MENU ► Device ► Camera**) and then press **↵**. The Camera Setup screen displays.

Figure 3-17 Camera Setup Screen



The Camera setup screen displays the camera inputs in groups of four: 1-4, 5-8, 9-12, and 13-16.

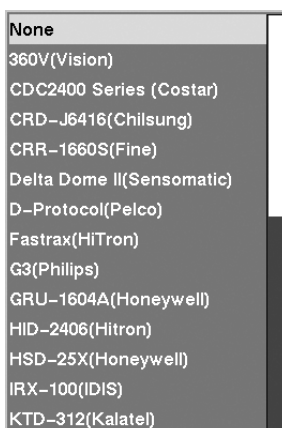
1. You can turn the camera number **On** or **Off**, and also hide the video of the camera number by highlighting the Camera and then pressing **↵**. To change the settings for all the cameras on the page (for example, cameras 1 to 4 as shown in *Figure 3-17*), highlight the camera **Setup** heading and then press **↵**. Select from the following options in the drop-down list:

On, Off, Covert 1, Covert 2

Note

When you select **Covert 1**, the DVR displays the camera title and status icons on the covert video. When you select **Covert 2**, the DVR displays only the camera title on the covert video.

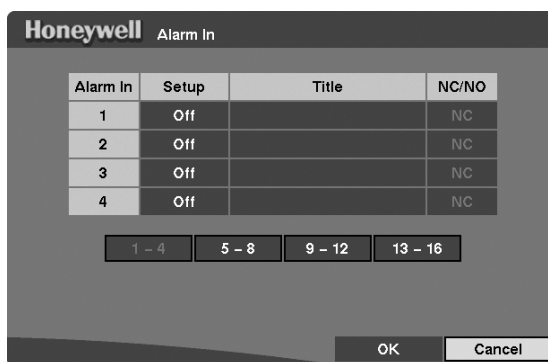
2. To assign titles to each camera, highlight the **Title** heading and then press **↵**. A virtual keyboard (see *Figure 3-7*) allows you to enter camera names. See *Figure 3-7*.
3. Selecting the **PTZ Device** box causes a list of controllable cameras to display. Select your camera from the list and then press **↵**. You must connect the camera to the RS485 terminal on the back of the DVR following the camera manufacturer's instructions.

Figure 3-18 PTZ Device List

- To assign IDs to each camera, highlight the **ID** heading and then press **↵**. To change the number, highlight it and use the Up and Down Arrow buttons to increase and decrease the numbers. The PTZ ID number can be set from **0** to **256**.

Alarm In Setup Screen

The alarm terminal strip on the back of the DVR has inputs associated with each alarm. The inputs are displayed in groups of four. Use the Alarm In Setup screen to configure each alarm input. Highlight **Alarm In** in the Device menu (**MENU > Device > Alarm-In**) and then press **↵**. The Alarm In setup screen displays.

Figure 3-19 Alarm In Screen

The alarm terminal strip on the back of the DVR has inputs associated with each alarm. The inputs are displayed in groups of four. You can turn each input **On** or **Off**. Each input can be given a title, and the inputs can be set as **NO** (normally open) or **NC** (normally closed) independently.

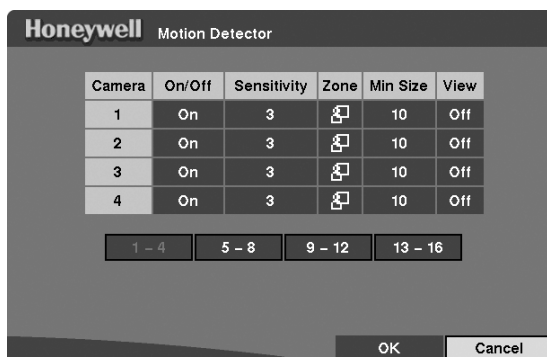
To change the settings for all the cameras on the page (for example, cameras 1 to 4 in *Figure 3-19*), select either the **Setup** heading or the **NC/NO** heading first, then change the option.

Motion Detector

Your DVR has a built-in video motion detector. Use the Motion Detector screen to turn video motion detection On or Off for each camera and to define the area of the image where you want to detect motion.

Highlight **Motion Detector** in the Device menu (**MENU ► Device ► Motion Detector**) and then press **↵**. The Motion Detector screen displays.

Figure 3-20 Motion Detector Screen



Your DVR has built-in video motion detector. Video motion detection can be turned On or Off for each camera.

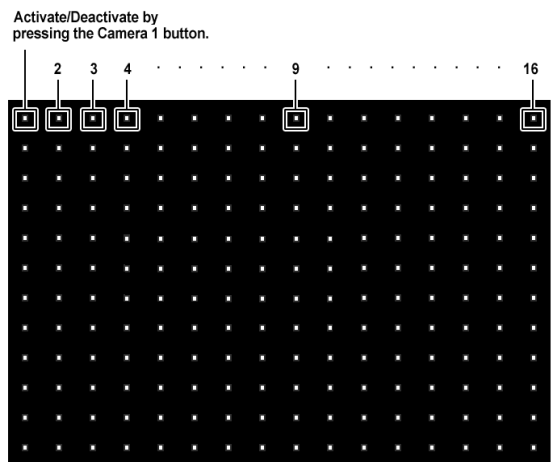
To adjust the DVR sensitivity to motion, highlight the box under the **Sensitivity** heading. There are five settings from **1** to **5**—**1** is the least sensitive and **5** is the most sensitive.

You can adjust the minimum number of detection blocks that must be activated to trigger a motion alarm. Highlight a box under the **Min Size** heading and adjust the number. The smaller the number, fewer detection blocks must be activated and therefore the sensitivity is increased.

Turning the **View** setting On allows you to observe how the DVR is reacting to motion. When in the motion viewing mode, the detection zone of video displays in green. Any detected motion within the zone displays in red.

You can define the area of the image where you want to detect motion; for example, a doorway. Highlight the icon under the **Zone** heading, and then press **↵**. The Motion Detection Zone screen displays.

Figure 3-21 Motion Detection Zone Screen

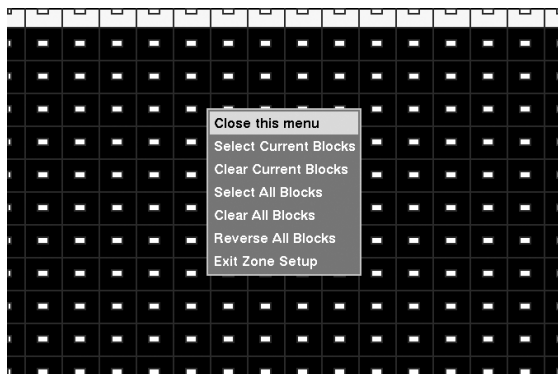


The Motion Detection Zone screen is laid over the video for the selected camera. You can set up motion detection zones by selecting or clearing blocks.

Note You can set up motion zones one block at a time in groups of 4, 9 or 16 individual block groups (4-, 9- and 16-channel DVR respectively). Use the Up and Down Arrow buttons to position a block group within the image area. Similarly, select individual blocks within the block groups or clear individual blocks using the camera buttons.

Press **↵** to display the Motion Detection Zone menu. *Figure 3-22* displays the functions of the Motion Detection Zone menu.

Figure 3-22 Motion Detection Zone Menu



The menu choices are described as follows:

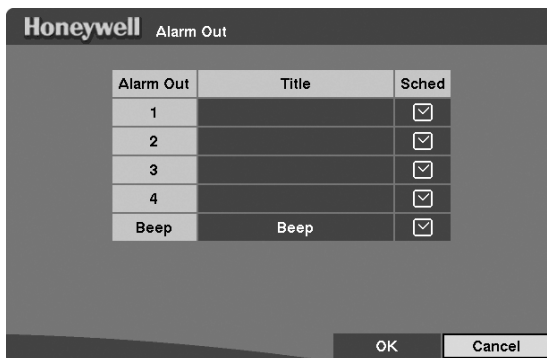
Table 3-3 Motion Detection Zone Choices

Menu choice	Description
Close this menu	Closes the menu so that you can see the entire screen.
Select Current Blocks	Activates highlighted blocks to detect motion.
Clear Current Blocks	Deactivates highlighted blocks so that they will not detect motion.
Select All Blocks	Activates all blocks to detect motion.
Clear All Blocks	Deactivates all blocks so that they will not detect motion.
Reverse All Blocks	Activates inactive blocks and deactivates active blocks.
Exit Zone Setup	Asks you to confirm changes and then returns to the previous screen.

Alarm Out Setup Screen

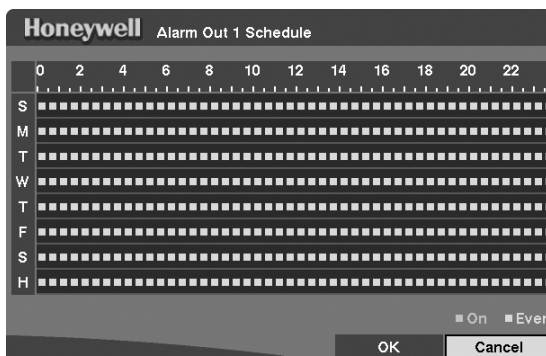
Use the Alarm Out setup screen to establish a schedule for each alarm output from the DVR. Highlight **Alarm Out** from the Device menu (**MENU ► Device ► Alarm-Out**) and then press **↵**. The Alarm Out Setup screen displays.

Figure 3-23 Alarm Out Setup Screen



1. To give each alarm output its own title, highlight the box under the **Title** heading and then press **↵**. A virtual keyboard displays (see [Figure 3-7](#)) allowing you to enter the title.

Figure 3-24 Alarm Out Schedule Screen



2. To open a schedule screen, highlight the **Sched** field and then press \leftarrow . You can schedule alarm output in 30-minute increments from 0:00 to 24:00.

You can select individual blocks of time, entire days of the week, entire blocks of time, or the entire schedule.

- Select a specific block of time by highlighting it.
- Select an entire day by highlighting the day of the week or Holiday on the left of the screen.
- Select an entire block of time by highlighting the time at the top of the screen.
- Select the entire screen by highlighting the empty box in the upper left corner of the screen. Press \leftarrow from **No Arming** (no block) to **On** (blue block) to **Event** (yellow block).

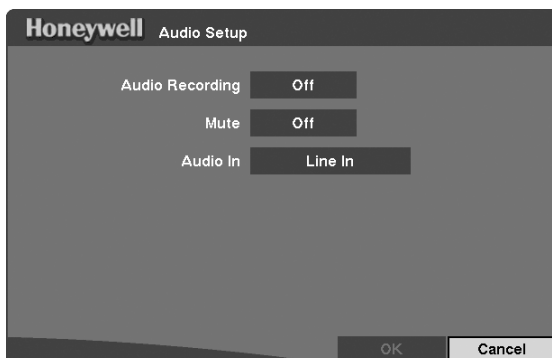
On means the Alarm Out is active during the scheduled time.

Event indicates the Alarm Out is only active when there is an Event during the scheduled time.

Audio Setup Screen

Use the Audio Setup screen to set the DVR to record audio when it is recording video. Highlight **Audio** in the Device menu (**MENU** ► **Device** ► **Audio**) and then press **↵**. The Audio Setup screen displays.

Figure 3-25 Audio Setup Screen



1. Highlight the box beside **Audio Recording** and then press **↵**. This toggles between **On** and **Off**. When it is **On**, the DVR also records audio when it is recording video.
2. Highlight the box beside **Mute** and then press **↵**. This toggles between **On** and **Off**. When it is **On**, the DVR will NOT play live or recorded audio.
3. Highlight the box beside **Audio In** and then press **↵** to toggle between **Mic In** and **Line In**.

Mic In is for an unamplified source.

Line In is for an amplified source.

To save your changes, highlight **OK** and then press **↵**. Select **Cancel** to exit the screen without saving the changes.

Note When the recording speed is set to less than 1 ips, the DVR cannot guarantee the standard quality audio playback.

RS232/RS485 Setup Screen

Use the RS232/RS485 Setup screen to set up the RS232 and RS485 ports to communicate with external devices such as modems, remote controls, and dome cameras. Highlight **RS232/RS485** in the Device menu (**MENU** ➤ **Device** ➤ **RS232/RS485**) and then press **↵**. The RS232/RS485 Setup screen displays.

Figure 3-26 RS232/RS485 Setup Screen

RS232/RS485	RS232	RS485
Baud Rate	57600	57600
Parity	None	None
Data Bit	8	8
Stop Bit	1	1
Usage	External Modem	Remote Control

OK Cancel

1. Highlight the field for the settings you wish to make. Select the correct Baud Rate, Parity, Data Bits, and Stop Bits for the device you are connecting to the DVR.
2. For RS232, it is possible to select either **Remote Control** or **External Modem** in the **Usage** field.

For RS485, it is possible to select either **Remote Control** or **PTZ Control** in the **Usage** field.

Note Do not configure both the RS232 and RS485 ports to communicate with remote controls at the same time.

Note If networking is configured by the external modem, the RS232 port cannot be set up for the remote control. In the Network Setup menu, set up the DVR for LAN connections first.

Configuring Recording Settings

Note Pressing **REC** on the front of the DVR causes the red LED to light and indicates the DVR is ready to record. However, this does not mean the DVR is recording. The DVR records video based on the parameters such as schedule and events defined during configuration.

Your DVR offers a variety of flexible recording modes:

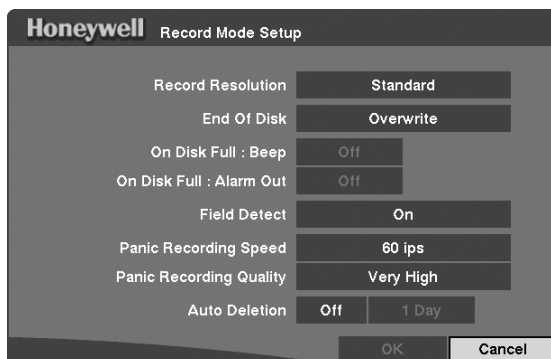
- You can set it up to record all the time or to only record events.
- It can be set up to continue recording after the hard disk drive is full by recording over the oldest video.
- You can set it up to alert you when the hard disk is full and stop recording.

Highlight **Record Mode**, **Time-Lapse Record** or **Pre-Event Record** in the Record menu and then press \leftarrow . The following recording setup screen display.

Record Mode Setup Screen

Access the Record Mode Setup screen (**MENU** \blacktriangleright **Record** \blacktriangleright **Record Mode**) and then press \leftarrow . The Record Mode Setup screen displays.

Figure 3-27 Record Mode Setup Screen



1. Highlight the box beside **Record Resolution** and select from **High** and **Standard**. All the other variables being equal, selecting High decreases the recording and playback speed by half of Standard.
2. Highlight the box beside **End Of Disk** and then press \leftarrow . This toggles between **Overwrite** and **Stop**.

In **Overwrite** mode, the DVR continues recording when the hard disk drive is full by overwriting the oldest video.

In **Stop** mode, the DVR stops recording when the hard disk drive is full.

3. If the DVR is set to **Stop** mode, you can set it to beep or activate the Alarm Out AO1 port when the hard disk drive is full. Highlight the box beside **On Disk Full: Beep** and press \leftarrow to toggle between **On** and **Off**. Highlight the box beside **On Disk Full: Alarm Out** and then press \leftarrow to toggle between On and Off.
4. Highlight the box beside **Field Detect**. Press \leftarrow to toggle between **On** and **Off**.

When set to **On**, the Field Detection helps prevent shaking. It does this by recording odd numbered fields from odd numbered cameras and even numbered fields from even numbered cameras.

Note When Field Detect is set to **On**, single channel recording is limited to 30 ips.

5. Highlight the box beside **Panic Recording Speed**, then press \leftarrow . A drop-down list of panic recording speeds displays. Select from 1 image per 10 seconds to **60** images per second for NTSC (to 50 images per second for PAL).

Note If you set the Record Resolution to **High**, you will not be able to select 60 ips NTSC (50 ips PAL).

6. Highlight the box beside **Auto Deletion**. Press \leftarrow to toggle between **On** and **Off**.
When set to **On**, the DVR deletes video recorded earlier than the user-defined period. Highlight the second box beside Auto Deletion and press \leftarrow to select the length of time recorded data will be kept, from **1** to **99** days.

Note When the End of Disk box is set to **Stop**, the DVR will NOT restart recording, even after video recorded earlier than the user-defined period is deleted.

7. To save your change, highlight **OK** and then press \leftarrow . Selecting **Cancel** exits the screen without saving the changes.

Time-Lapse Record Mode Setup Screen

Access the Time-Lapse Record Setup screen (**MENU ► Record ► Time-Lapse Record**) and then press **↵**. The Time-Lapse Record Setup screen displays.

Figure 3-28 Time-Lapse Record Setup Screen

Camera	Sched	Mode 1		Mode 2	
		Speed	Quality	Speed	Quality
1	<input checked="" type="checkbox"/>	60 ips	Standard	60 ips	Standard
2	<input checked="" type="checkbox"/>	60 ips	Standard	60 ips	Standard
3	<input checked="" type="checkbox"/>	60 ips	Standard	60 ips	Standard
4	<input checked="" type="checkbox"/>	60 ips	Standard	60 ips	Standard

1 - 4 5 - 8 9 - 12 13 - 16

Keep the continuous pictures Off 1 Hour

OK Cancel

1. Highlight the box under the **Speed** heading and then press **↵**. A drop-down list of record speeds displays. You can select from 1 image per 10 seconds to 60 images per second for NTSC (to 50 images per second for PAL).

Note If you set the Record Resolution to High, you will not be able to select 60 ips NTSC (50 ips PAL).

2. Highlight the box under the **Quality** heading and then press **↵**. A drop-down list displays. You can select from **Very High**, **High**, **Standard**, and **Low** image quality. All other variables being equal, Very High will require 600% more hard disk space than Standard, High will require 250% more, and Low 30% less.

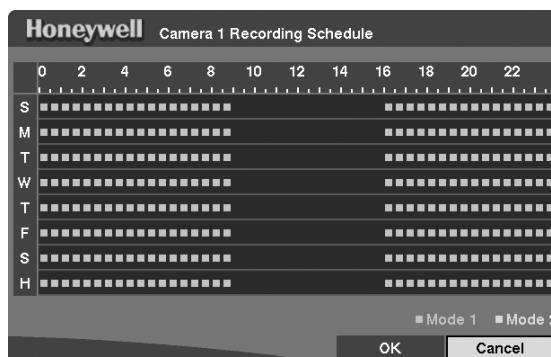
Note Higher quality images require more storage space and reduce the recording capacity of the hard disk drive.

3. You can set the maximum amount of time-lapse video to be stored. After the DVR reaches this amount, it will start recording over the oldest time-lapse video. The time-lapse video is stored separate from Event video. When **Keep the continuous pictures** is set to **On**, you can set the time from 1 Hour to the maximum allowed by the storage capacity of your hard disk drive.

Note The maximum storage time is only an estimate because the amount of space required to store video varies depending on many factors such as motion and image complexity.

Time-Lapse Recording Schedule

Figure 3-29 Time-Lapse Recording Schedule Screen



You can program the DVR to record only during certain times based on time, day of the week, and holidays. The smallest time segment you can use is 30 minutes. A blue rectangle indicates the DVR is set to record during those 30 minutes. When there is no rectangle, the DVR will not record during those 30 minutes.

There are several ways to set recording times:

- You can highlight an individual block and toggle it On or Off by pressing **↵**.
- You can change a 30-minute segment for all days by placing the cursor on the time line and then pressing **↵** to toggle the segment On or Off.
- You can change an entire day by placing the cursor on the day of the week and then pressing **↵** to toggle the day On or Off.
- You can change the entire calendar by placing the cursor in the upper left-hand box (above S and to the left of the time line) and then pressing **↵** to toggle the entire calendar On and Off.

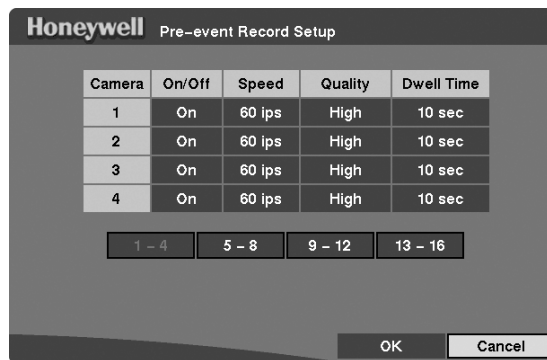
Note The Holiday (H) schedule applies to the dates you established as holidays when setting Date/Time.

To save your changes, highlight **OK** and then press **↵**. Select **Cancel** to exit the screen without saving the changes.

Pre-event Record Setup Screen

When the DVR is in the Event Record mode it is possible to have it record images before the event occurs. Use the Pre-event Record screen to define how to handle pre-event recording. Access the Pre-event Recording Setup screen (**MENU ► Record ► Pre-event Record**) and then press **↵**. The Pre-event Record Setup screen displays.

Figure 3-30 Pre-event Record Setup Screen



You can turn individual cameras **On** or **Off** for pre-event recording. You can set the image speed from **0.1** to **60** ips NTSC (50 ips PAL), and image quality from **High**, **Standard**, and **Low**.

You can set the amount of time to record prior to the event by adjusting the Dwell Time. You can set the Dwell from **1** to **300** seconds.

Note When the DVR is in the Time-Lapse mode, it ignores the pre-event settings and follows the time-lapse settings

Event Action Setup

You can program the DVR to record, activate the alarm output, and/or notify the remote site whenever sensor, motion or video loss events are detected. In the Event Action menu (**MENU ► Event Action**) select **Alarm-In Action**, **Motion Action**, or **Video Loss Action** and then press **↵**. The following Event Action setup screens display.

Alarm In Event Action (Record) Setup Screen

The DVR can be set to react to events differently. Each sensor can be assigned a schedule, camera, recording speed, video quality, and dwell time.

Figure 3-31 Alarm In Event Action (Record) Setup Screen

Honeywell Alarm In Event Action					
		Mode 1	Mode 2		
		Record	Alarm Out	Notify	
Sensor	Sched	Camera	Speed	Quality	Dwell Time
1	<input checked="" type="checkbox"/>	1	60 ips	Standard	10 sec
2	<input checked="" type="checkbox"/>	2	60 ips	Standard	10 sec
3	<input checked="" type="checkbox"/>	3	60 ips	Standard	10 sec
4	<input checked="" type="checkbox"/>	4	60 ips	Standard	10 sec

1 - 4 5 - 8 9 - 12 13 - 16

OK Cancel

1. Highlight the **Sched** box and then press \leftarrow . A schedule screen displays. Set the schedule as described earlier (see *Time-Lapse Recording Schedule*, page 48).
2. Highlight the **Camera** box and then press \leftarrow . A camera selection screen display. Select the camera number you would like to associate with the sensor.

Note You can associate multiple cameras with a sensor.

3. Highlight the **Speed** box and select number of images per second you would like to record from the drop-down list.
4. Highlight the **Quality** box and select the image quality you want to record from the drop-down list.
5. Highlight the **Dwell** box and set the length of time you would like to record for the associated event.

Alarm In Event Action (Alarm Out) Setup Screen

Use this screen to set how the DVR reacts to events differently by activating an internal buzzer or external alarms.

Figure 3-32 Alarm In Event Action (Alarm Out) Setup Screen

Honeywell Alarm In Event Action			
		Mode 1	Mode 2
		Record	Alarm Out
Sensor	Sched	Alarm Out	
			Dwell Time
1	<input checked="" type="checkbox"/>	-	10 sec
2	<input checked="" type="checkbox"/>	-	10 sec
3	<input checked="" type="checkbox"/>	-	10 sec
4	<input checked="" type="checkbox"/>	-	10 sec

1 - 4 5 - 8 9 - 12 13 - 16 OK Cancel

1. Highlight the **Sched** box and then press \leftarrow . A schedule screen displays. Set the schedule as described earlier.
2. Highlight the **Alarm Out** box and select **Beep** and/or the alarm output terminal that you want to associate with the sensor.
3. Highlight the **Dwell Time** box and set the length of time you want the output activated.

Note When setting the dwell time to **0 sec**, the alarm output will be activated throughout the sensor activation period, and inactive while the sensor is inactive.

Alarm In Event Action (Notify) Setup Screen

Use this screen to set the DVR to notify the remote site when certain events are activated.

Figure 3-33 Alarm In Event Action (Notify) Setup Screen

Honeywell Alarm In Event Action			
		Mode 1	Mode 2
		Record	Alarm Out
Sensor	Sched	Notify	
1	<input checked="" type="checkbox"/>	Off	
2	<input checked="" type="checkbox"/>	Off	
3	<input checked="" type="checkbox"/>	Off	
4	<input checked="" type="checkbox"/>	Off	

1 - 4 5 - 8 9 - 12 13 - 16 OK Cancel

1. Highlight the **Sched** box and then press \leftarrow . A schedule screen displays. Set the schedule as described earlier.
2. Highlight the **Notify** box and then press \leftarrow . This toggles between **On** and **Off**.

When it is On, the DVR notifies the remote site when certain events occur based on a defined schedule.

Note For the Notify action to work, the DVR should be registered in the RAS (Remote Administration System).

Motion Detector Event Action (Record) Setup Screen

Use this screen to set the DVR to react to motion detection differently. Each camera can be assigned a schedule, associated camera, recording speed, video quality and dwell time.

Figure 3-34 Motion Detector Event Action (Record) Setup Screen

Honeywell Motion Detector Event Action					
		Mode 1	Mode 2		
		Record	Alarm Out	Notify	
Camera	Sched	Camera	Speed	Quality	Dwell Time
1	<input checked="" type="checkbox"/>	1	60 ips	Standard	10 sec
2	<input checked="" type="checkbox"/>	2	60 ips	Standard	10 sec
3	<input checked="" type="checkbox"/>	3	60 ips	Standard	10 sec
4	<input checked="" type="checkbox"/>	4	60 ips	Standard	10 sec

1 - 4 5 - 8 9 - 12 13 - 16

OK Cancel

1. Highlight the **Sched** box and then press \leftarrow . A schedule screen displays. Set the schedule as described earlier.
2. Highlight the **Camera** box and then press \leftarrow . A camera selection screen displays. Select the camera number you would like to associate with the camera.

Note You can associate multiple cameras with a camera that detects motion.

3. Highlight the **Speed** box and select number of images per second you would like to record from the drop-down list.
4. Highlight the **Quality** box and select the image quality you want to record from the drop-down list.
5. Highlight the **Dwell Time** box and set the length of time you would like to record for the associated motion event.

Motion Detector Event Action (Alarm Out) Setup Screen

Use this screen to set the DVR to react to motion events differently by activating an internal buzzer or external alarms.

Figure 3-35 Motion Detector Event Action (Alarm Out) Setup Screen

Honeywell Motion Detector Event Action			
		Mode 1	Mode 2
		Record	Alarm Out
Camera	Sched	Notify	
		Alarm Out	Dwell Time
1	<input checked="" type="checkbox"/>	-	10 sec
2	<input checked="" type="checkbox"/>	-	10 sec
3	<input checked="" type="checkbox"/>	-	10 sec
4	<input checked="" type="checkbox"/>	-	10 sec

1 - 4 5 - 8 9 - 12 13 - 16 OK Cancel

1. Highlight the **Sched** box and then press \leftarrow . A schedule screen displays. Set the schedule as described earlier.
2. Highlight the **Alarm Out** box and select **Beep** and/or the alarm output terminal that you want to associate with the motion event.
3. Highlight the **Dwell Time** box and set the length of time you want the output activated.

Note When setting the dwell time to **0 sec**, the alarm output will be activated throughout the sensor activation period, and inactive while the sensor is inactive.

Motion Detector Event Action (Notify) Setup Screen

Use this screen to set the DVR to notify the remote site when certain motion events are activated.

Figure 3-36 Motion Detector Event Action (Notify) Setup Screen

Honeywell Motion Detector Event Action			
		Mode 1	Mode 2
		Record	Alarm Out
Camera	Sched	Notify	
1	<input checked="" type="checkbox"/>	Off	
2	<input checked="" type="checkbox"/>	Off	
3	<input checked="" type="checkbox"/>	Off	
4	<input checked="" type="checkbox"/>	Off	

1 - 4 5 - 8 9 - 12 13 - 16 OK Cancel

1. Highlight the **Sched** box and then press \leftarrow . A schedule screen displays. Set the schedule as described earlier.
2. Highlight the **Notify** box and then press \leftarrow . This toggles between **On** and **Off**. When it is On, the DVR notifies the remote site when certain events occur based on a defined schedule.

Note For the Notify action to work, the DVR should be registered in the RAS (Remote Administration System).

Video Loss Event Action (Record) Setup Screen

Use this screen to set the DVR to react to video loss from a camera differently. Each camera can be assigned a schedule, associated camera, recording speed, video quality and dwell time.

Figure 3-37 Video Loss Event Action (Record) Setup Screen

Honeywell Video Loss Event Action					
		Mode 1	Mode 2		
		Record	Alarm Out	Notify	
Camera	Sched	Camera	Speed	Quality	Dwell Time
1	<input checked="" type="checkbox"/>	-	60 ips	Standard	10 sec
2	<input checked="" type="checkbox"/>	-	60 ips	Standard	10 sec
3	<input checked="" type="checkbox"/>	-	60 ips	Standard	10 sec
4	<input checked="" type="checkbox"/>	-	60 ips	Standard	10 sec

1 - 4 5 - 8 9 - 12 13 - 16 OK Cancel

1. Highlight the **Sched** box and then press \leftarrow . A schedule screen displays. Set the schedule as described earlier.
2. Highlight the **Camera** box and then press \leftarrow . A camera selection screen displays. Select the camera number you would like to associate with the camera that has lost video.

Note You can associate multiple cameras with a camera that has detected a loss of video.

3. Highlight the **Speed** box and select number of images per second you would like to record from the drop-down list.
4. Highlight the **Quality** box and select the image quality you want to record from the drop-down list.
5. Highlight the **Dwell Time** box and set the length of time you would like to record for the associated video loss.

Video Loss Event Action (Alarm Out) Setup Screen

The DVR can be set to react to video loss differently by activating an internal buzzer or external alarms.

Figure 3-38 Video Loss Event Action (Alarm Out) Setup Screen

Honeywell Video Loss Event Action			
		Mode 1	Mode 2
		Record	Alarm Out
Camera	Sched	Alarm Out	
1	<input checked="" type="checkbox"/>	Beep	
2	<input checked="" type="checkbox"/>	Beep	
3	<input checked="" type="checkbox"/>	Beep	
4	<input checked="" type="checkbox"/>	Beep	

1 - 4 5 - 8 9 - 12 13 - 16 OK Cancel

1. Highlight the **Sched** box and then press \leftarrow . A schedule screen displays. Set the schedule as described earlier.
2. Highlight the **Alarm Out** box and select **Beep** and/or the alarm output terminal that you want to associate with the camera that has lost video.

Video Loss Event Action (Notify) Setup Screen

Use this screen to set the DVR to notify the remote site in the case of video loss.

Figure 3-39 Video Loss Event Action (Notify) Setup Screen

Honeywell Video Loss Event Action			
		Mode 1	Mode 2
		Record	Alarm Out
Camera	Sched	Notify	
1	<input checked="" type="checkbox"/>	Off	
2	<input checked="" type="checkbox"/>	Off	
3	<input checked="" type="checkbox"/>	Off	
4	<input checked="" type="checkbox"/>	Off	

1 - 4 5 - 8 9 - 12 13 - 16 OK Cancel

1. Highlight the **Sched** box and then press \leftarrow . A schedule screen displays. Set the schedule as described earlier.
2. Highlight the **Notify** box and then press \leftarrow . This toggles between **On** and **Off**. When it is **On**, the DVR notifies the remote site when it loses video input from a camera based on a defined schedule.

Note For the Notify action to work, the DVR should be registered in the RAS (Remote Administration System).

Display Setup

Highlight the OSD, Main Monitoring, or Spot Monitoring in the Display menu (**MENU ► Display ► OSD/Main Monitoring/Spot Monitoring**), and then press **↵** to set up the on-screen display or camera display on the main monitor or spot monitor.

OSD (On-Screen Display) Setup

The DVR can be set up to display Date, Time, Title and Status on screen. Each feature can be turned on or off and you can adjust the margins.

Figure 3-40 OSD Setup Screen



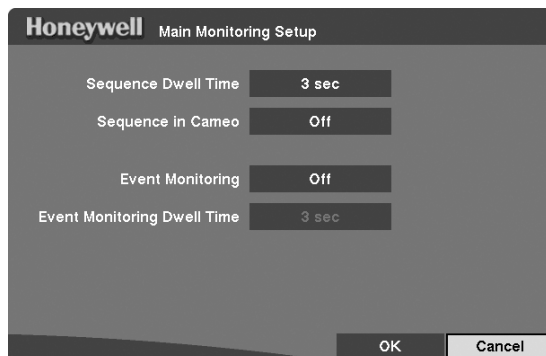
1. Highlight the box beside **Date** and then press **↵** to toggle the date display **On** and **Off**.
2. Highlight the box beside **Time** and then press **↵** to toggle the time display **On** and **Off**.
3. Highlight the box beside **Title** and then press **↵** to toggle the camera title display **On** and **Off**.
4. Highlight the box beside **Status** and then press **↵** to toggle status display **On** and **Off**.

5. Highlight the box beside **Left/Right Margin** and then press \leftarrow to adjust the left and right margins. The margins can be set from **1** to **24**.
6. Highlight the box beside **Top/Bottom Margin** and then press \leftarrow to adjust the top and bottom margins. The margins can be set from **1** to **24**.

Main Monitoring Setup Screen

Use the Main Monitoring Setup screen (**MENU ► Display ► Main Monitoring**) to adjust the display dwell time for each camera displayed on the main monitor. You can also turn camera sequence and event monitoring on and off.

Figure 3-41 Main Monitoring Setup Screen



1. Highlight the box beside **Sequence Dwell Time** and then press \leftarrow . You can adjust the sequence dwell time from **3** to **60** seconds.
2. Highlight the box beside **Sequence in Cameo** and then press \leftarrow to toggle between On and Off. (Not on 4-camera model.)

Pressing **SEQUENCE** causes the DVR to sequence cameras, and the DVR can sequence cameras in two modes:

Page. In Page mode, the DVR sequences through user-defined screen layouts (pages).

Cameo. In Cameo mode, the bottom right window in a multiscreen format sequences through all cameras.

Note The DVR does not sequence the camera having video loss in the Cameo mode.

You can define the screen layout in a variety of formats and set the DVR to sequence through the different screen layouts (pages) so that all the cameras will display. You can also set up the DVR to display one camera or a group of cameras all the time while cycling through the remaining cameras in a cameo window. This can be done with one

camera displayed full screen while displaying the cameo window as a PIP (picture-in-picture), or displaying the cameras in a grid pattern with the bottom right window as the cameo.

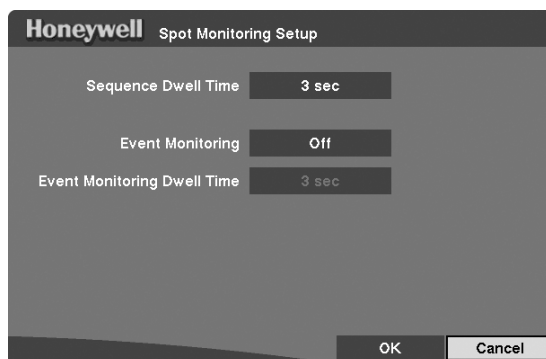
Note Sequence cannot be used in the 4x4 display mode of the 16-channel, 3x3 mode of the 9-channel, or the 2x2 mode of the 4-channel DVR.

3. Highlight the box beside **Event Monitoring** and then press \leftarrow to toggle between **On** and **Off**. When it is On, the video of the lowest camera number among cameras associated with the event-detected sensor will be displayed in full-screen on the main monitor during the preset dwell time.
4. Highlight the box beside **Event Monitoring Dwell Time** and then press \leftarrow . You can adjust the event monitoring dwell time from **3** to **60** seconds.

Spot Monitoring Setup Screen

Use this screen (**MENU ► Display ► Spot Monitoring**) to adjust the display dwell time for each camera displayed on the spot monitor. You can also turn event monitoring on and off.

Figure 3-42 Spot Monitoring Setup Screen

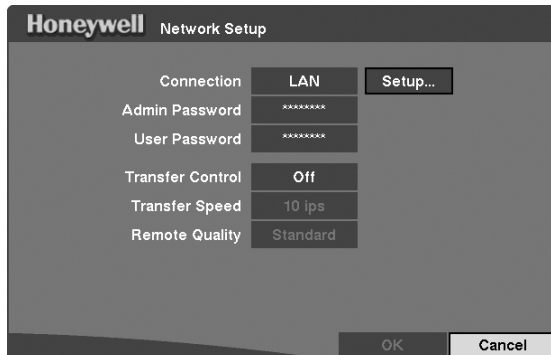


1. Highlight the box beside **Sequence Dwell Time** and then press \leftarrow . You can adjust the sequence dwell time from **3** to **60** seconds.
2. Highlight the box beside **Event Monitoring** and then press \leftarrow to toggle between On and Off. When it is On, the video of the lowest camera number among cameras associated with the event-detected sensor will be displayed in full-screen on the spot monitor during the preset dwell time.
3. Highlight the box beside **Event Monitoring Dwell Time** and then press \leftarrow . You can adjust the event monitoring dwell time from **3** to **60** seconds.

Network Setup Screen

Use the Network Setup screen (**MENU ► Network ► Network Setup**) to set up the DVR for LAN connections.

Figure 3-43 Network Setup Screen



1. Highlight the box beside **Connection**. Press \leftarrow to toggle between **LAN** and **Modem**.
2. Highlight the box beside **Admin Password** and then press \leftarrow . A virtual keyboard displays (see [Figure 3-7](#)). You will first be asked to enter the current password. Then you can enter a new password; you will be asked to confirm the new password before it is accepted.
3. Highlight the box beside **User Password** and then press \leftarrow . A virtual keyboard displays. You will first be asked to enter the current password. Then you can enter a new password; you will be asked to confirm the new password before it is accepted.

Note These passwords are for network use. They are different from the Admin and User passwords for the DVR itself. The passwords are case sensitive. The factory default password for both Administrator and User is 12345678.

Caution Write the password down and keep it in a safe place. After the password has been reset, the default will no longer work. If the password is forgotten, the unit must be reset using the Factory Reset Button and all data settings will be lost.

4. Highlight the box beside **Transfer Control** and then press \leftarrow to toggle between **On** and **Off**. When **On**, you can set the transfer speed and remote quality of the image transferred to a computer running RAS (Remote Administration System) software.
5. Highlight the box beside **Transfer Speed** and then press \leftarrow . Select the transfer speed from **1** to **30** ips.

Note

The transfer speed you set is the maximum speed. Depending on the network environment, this speed may not be achieved.

The transfer speed indicates the image rate transferred to each RAS. If two remote sites (RAS) are connecting to the DVR, the number of images transferred via network will be Transfer Speed x 2.

The Transfer Control option affects the recording performance of the DVR. The number of remote sites (RAS) connected to the DVR does not affect the recording speed. The local recording speed is affected only by Transfer Speed. The local recording speed is not affected if the DVR is not connected remotely.

If Transfer Control is not used, data transfer speed to a remote site will be the same as the local recording speed.

6. Highlight the box beside **Remote Quality** and then press \leftarrow . Select the image quality from **Very High**, **High**, **Standard**, and **Low**.

LAN Setup Screen

Use the LAN Setup screen (**MENU** ► **Network** ► **Network Setup** ► **LAN**) to configure your Local Area Network.

Figure 3-44 LAN Setup Screen

1. Highlight the box beside **Type** and then press \leftarrow to select from **Manual**, **DHCP**, or **ADSL (PPPoE)**.

LAN Setup - Manual

Selecting **Manual** allows you to set up LAN parameters manually.

Note Obtain the appropriate IP Address, Gateway, and Subnet Mask, from your network administrator.

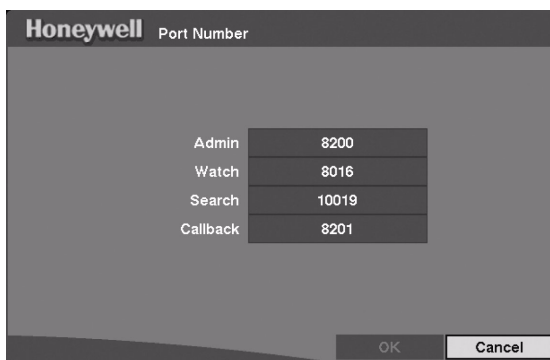
2. Change the numbers by highlighting them and using the Up and Down Arrow buttons or the Jog Dial to increase or decrease the number.

The factory default LAN settings are:

IP Address	192.168.1.129
Gateway	192.168.1.254
Subnet Mask	255.255.255.0

3. Highlight the box beside **DNS Server** and then press \leftarrow to enter the IP address of the DNS server. If you set up the DNS Server, the domain name of the DVRNS server can be used instead of the IP address during the DVRNS Server setup (see *DVRNS (DVR Name Service) Setup Screen*, page 68 for more details).
4. Highlight the box beside **Port Number ...** and then press \leftarrow . The Port Number Setup screen displays.

Figure 3-45 Port Number Setup Screen



Note Obtain the appropriate Port Number for each RAS related program (Admin, Watch, Search, and Callback) from your network administrator.

5. Change the numbers by highlighting them and using the Up and Down Arrow buttons or the Jog Dial to increase or decrease the number.

The factory default Port settings are:

Admin	8200
Watch	8016
Search	10019
Callback	8201

Note The system restarts automatically after changing the port settings.

Note Do **not** use the same port number for two different programs; otherwise, the DVR cannot be connected with a PC running RAS.

Caution When you change the port settings you must also change the port settings on a PC running RAS. Refer to the *RAS User Guide* for detailed information.

6. To save your changes and return to the Network Setup screen, highlight **OK** and then press **↵**. Select **Cancel** to exit the screen without saving the changes.

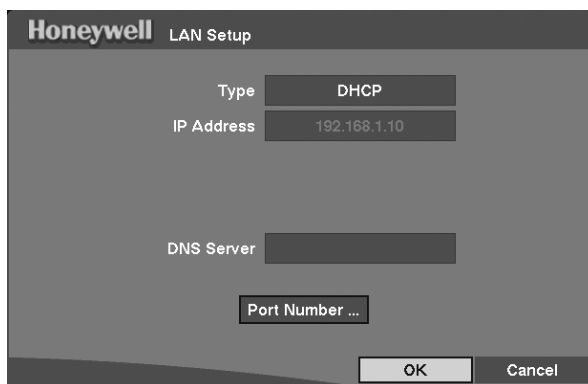
LAN Setup - DHCP

To set up a LAN (DHCP) connection:

1. On the LAN Setup screen, highlight the box beside **Type**, then press **↵**.
2. Select **DHCP**, then highlight **OK**.

The system reads the current IP address of the DVR configured by DHCP (Dynamic Host Configuration Protocol) network.

Figure 3-46 LAN (DHCP) Setup Screen



The screenshot shows the 'Honeywell LAN Setup' window. It has a 'Type' dropdown menu set to 'DHCP'. Below it, the 'IP Address' field displays '192.168.1.10'. There is an empty 'DNS Server' field and a 'Port Number ...' button. At the bottom right are 'OK' and 'Cancel' buttons.

LAN Setup - ADSL

Note You cannot configure ADSL and modem at the same time. If the DVR is networked via modem, the ADSL (PPPoE) option will not be selected.

To set up a LAN ADSL connection:

1. On the LAN Setup screen, highlight the box beside **Type**, then press **↵**.
2. Select **ADSL (PPPoE)**, then highlight **OK**.

Figure 3-47 LAN (ADSL) Setup

Honeywell LAN Setup

Type ADSL(PPPoE)

IP Address

ID user

Password password

DNS Server

Port Number ...

OK Cancel

3. On the LAN Setup screen, highlight the box beside **ID**, then press \leftarrow . Use the virtual keyboard that appears to enter the ID for ADSL connection.
4. Highlight the box beside **Password** and then press \leftarrow . Use the virtual keyboard to enter the password for ADSL connection.

Note Entering the *ID* and *Password* and then highlighting OK, reads the current IP Address of the DVR configured by the ADSL network.

Modem Setup

Use the Modem Setup screen (**MENU** ► **Network** ► **Network Setup** ► **Modem**) to configure your modem.

Figure 3-48 Modem Setup Screen

RS232/RS485	RS232	RS485
Baud Rate	57600	57600
Parity	None	None
Data Bit	8	8
Stop Bit	1	1
Usage	External Modem	Remote Control

OK Cancel

Note Modem setup is done through the RS232/RS485 screen in the Devices menu which can be accessed from the Main Menu.

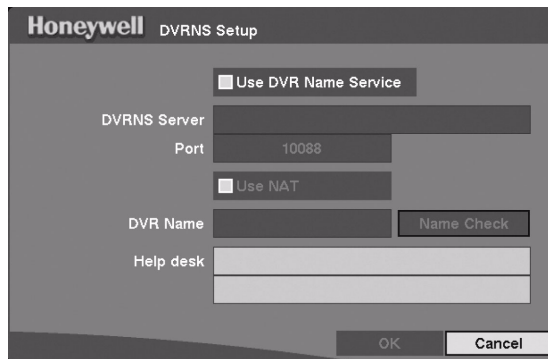
If the RS232 port is in use for the remote control, the networking cannot be configured by the modem. In the RS232/RS485 Setup menu, set up the RS232 port to communicate with the external modem first.

1. Highlight the box beside **Baud Rate** of the RS232 field and then press **↵**. A list of baud rates ranging from **300** to **115,200** displays.
2. Highlight the box beside **Parity** of the RS232 field and then press **↵**. A drop-down list displays. You can select from **None**, **Odd**, or **Even** parity.
3. Highlight the box beside **Data Bit** of the RS232 field. Press **↵** to toggle between **7** bit and **8** bit formats.
4. Highlight the box beside **Stop Bit** of the RS232 field. Press **↵** to toggle between **1** and **2** Stop Bits.
5. To save your changes, highlight **OK** and then press **↵**. Select **Cancel** to exit the screen without saving the changes.

DVRNS (DVR Name Service) Setup Screen

DVRNS allows the DVR to use dynamic IP addresses for remote connection. Use the DVRNS Setup screen to configure the DVRNS server and register the DVR to use DVR name service.

Figure 3-49 DVRNS Setup Screen



1. Highlight the box beside **Use DVR Name Service** and then press \leftarrow to toggle between **On** and **Off**,
2. Highlight the box beside **DVRNS Server** and enter the IP address or domain name of the DVRNS server

Note Obtain the appropriate IP address or domain name of the DVRNS Server from your network administrator.

You can use the domain name instead of the IP address if you have already set up the DNS Server during the LAN setup.

3. Highlight the box beside **Port** and enter the port number of the DVRNS server. The port number can be set from **10000** to **12000**.

Note The DVRNS server settings on your DVR should match the settings on the registered DVRNS server. Any changes on the DVRNS server might cause improper operation.

4. Highlight the **Use NAT** box and then press \leftarrow to toggle between **On** and **Off**.
Turn on **Use NAT** when the DVR is networking using the NAT (Network Address Translation) device.

Note When using the NAT device, refer to the NAT manufacturer's instructions for the appropriate network settings.

5. Highlight the box beside **DVR Name** and then press ↵ to name the DVR to be registered on the DVRNS server. A virtual keyboard allows you to enter the DVR name.
6. Selecting **Name Check** allows you to check whether or not the name you entered can be used.

Note The DVR name you entered should be checked by selecting **Name Check**; otherwise, the DVRNS changes will not be saved.

When entering no name or a name already registered on the DVRNS server, an error message displays.

7. Highlight **OK** and then press ↵ to register the DVR on the DVRNS server. Proper DVRNS settings display the help desk information of the DVRNS server in the box beside **Help Desk**.

Caution If you want to use the same DVR name registered on the DVRNS server after initializing the system using the factory reset, you need to contact the DVRNS server manager. Please record and save the help desk information before performing a factory reset.

Caution The DVRNS registration is limited to one DVRNS server. The DVR cannot be registered to multiple DVRNS servers. Please contact your network administrator when you want to register the DVR to another DVRNS server.

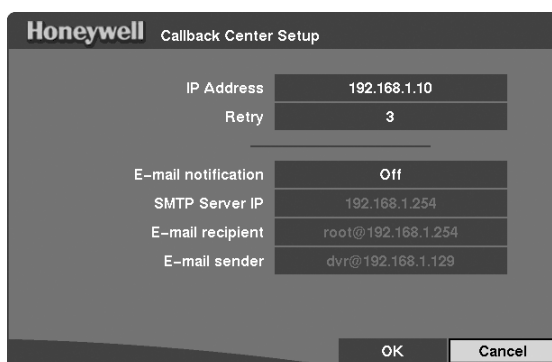
Callback Center Setup Screen

You can set up the DVR to contact a computer running RAS (Remote Administration System) and send an E-mail on a LAN when an event occurs. You can also set it up to dial a pager with a numeric message when an event occurs if you have a modem connected to the DVR.

Callback Center Setup by LAN Connections

Access the Callback Center Setup screen (**MENU ► Network ► Callback Center**).

Figure 3-50 Callback Center (LAN) Setup Screen



Honeywell Callback Center Setup	
IP Address	192.168.1.10
Retry	3
E-mail notification	Off
SMTP Server IP	192.168.1.254
E-mail recipient	root@192.168.1.254
E-mail sender	dvr@192.168.1.129
OK Cancel	

1. Highlight the box beside **IP Address** and enter the IP address of the computer you want contacted during an event.
2. Highlight the box beside **Retry** and enter the number of times you would like the DVR to try contacting the computer. You can select from **1** to **10** retries.
3. Highlight the box beside **E-mail notification** and then press **↵** to toggle between **On** and **Off**.
4. Highlight the box beside **SMTP Server IP** and enter the SMTP server IP address, obtained from your system administrator.
5. Highlight the box beside **E-mail recipient** and enter the recipient's e-mail address. Use the virtual keyboard (see [Figure 3-7](#)) to enter the e-mail address.
6. Highlight the box beside **E-mail sender** and enter the sender's e-mail address.

Note The e-mail address must include the character **@** to be a valid address.

Callback Center Setup by Modem Connections

Figure 3-51 Callback Center (Modem) Setup Screen

7. Highlight the box beside **Pager Number** and enter the telephone number of the pager. Enter the number as it must be dialed from your telephone system; for example, if you must dial 9 for an outside line, enter **9** before the pager number.
8. Highlight the box beside **Mailbox** and enter the voice mailbox number if your pager uses a voice mailbox.
9. Highlight the box beside **Site ID** and enter a three-digit site ID number.

When an event occurs, the DVR dials the pager and leaves a four- or five-digit number. The first three digits are the site ID number and the last digits are the type of event (1: Alarm In, 2: Motion Detection, 3: Video Loss, 10: Storage is Bad, and 12: S.M.A.R.T. Alert). For example, 0753 means that Site 75 has lost video.

Note The DVR waits for at least four minutes between pages. If another event occurs less than four minutes after the DVR has notified a pager, it will not dial the pager. It does this so that the telephone line is not tied up.

10. To save your changes, highlight **OK** and then press **↵**. Select **Cancel** to exit the screen without saving the changes.

Password Setup Screen

An Administrator password is required to:

- Turn the system off
- Enter the setup screen
- Load default setups
- Clear all data
- Change system date and time
- Change the Administrator password

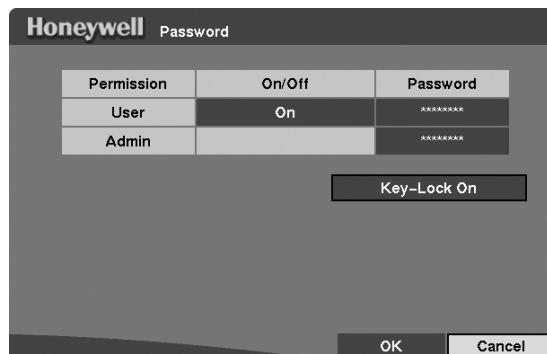
A User password is required to:

- Enter playback, fast forward playback, and fast backward playback modes from Live Monitoring mode.
- Enter the search menu screen in Live Monitoring mode and setup screens (access only to Clip Copy setup screens).

Press **ALARM** to display the event log in Live Monitoring mode unless there is an active alarm.

Highlight **Password** in the Main menu (**MENU ► Password**) and then press **↵**. The Password screen displays.

Figure 3-52 Password Setup Screen



1. Highlight the box beside **User** and then press **↵** to toggle between **On** and **Off**.
 If the password is set to **On**, you will be asked to enter the current password so that you can turn it Off.
 If the password is set to **Off**, you will be asked to enter the new password and to confirm it before it will be turned on.
2. The Administrator password cannot be turned on and off. You can change the Administrator password by first entering the current password, entering a new password, and then confirming the new password.

To change the password, highlight the **Password** box and then press ↵. A window displays asking you to enter the current password. If you enter the correct password, another window displays asking you to enter a new password using the camera buttons. After you press ↵, another screen displays asking you to confirm the new password.

Note The Admin and User passwords are composed of up to eight digits using the camera buttons. The default User password is **1234**, and Admin password is **4321**.

Caution Write down the new password and save it in a secure place. If the password is forgotten, the unit must be reset using the Factory Reset Button and all data settings will be lost.

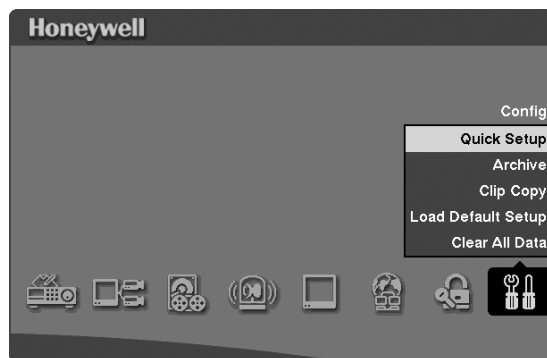
3. To lock front panel buttons, highlight **Key Lock On** and then press ↵. After the buttons are locked, pressing any front panel button will cause a password screen to display. The Administrator and User passwords are used to unlock the keys.
4. To save your changes, highlight **OK** and then press ↵. Select **Cancel** to exit the screen without saving the changes.

Config Screen

Use the Config menu (**MENU ► Configuration**) to perform functions such as:

- Switch between Quick Setup and Normal Setup
- Archive video
- Copy video clips
- Load default setup
- Clear all data

Figure 3-53 **Config Menu**



Archive

Use the Archive screen (**MENU ► Configuration ► Archive**) to archive video automatically or manually.

Figure 3-54 Archive Screen

Honeywell Archive	
Record Info. Start	2004-07-24 01:55:07
Record Info. End	2004-07-29 23:24:01
Archive Info. Start	2004-07-24 01:55:07
Archive Info. End	2004-07-29 23:24:01
Archive Disk Usage	50% remaining
Archive Status	Ready Auto Archive[0 - 24]
Setup	Manual
Update	Clear
Stop	
Close	

- Select **Update** to load the latest information displayed on the screen.
- Select **Clear** to erase all archived data.
- Select **Setup** to display a screen which you set up the archive parameters.

Figure 3-55 Archive Setup Screen

Honeywell Archive Setup	
End Of Disk	Stop
Auto Archive	On
Archive From	2004-07-24 04:08:15
Working From	0
Working To	24
OK	
Cancel	

1. Highlight the box beside **End of Disk** and then press \leftarrow to toggle between **Overwrite** and **Stop**.

When set to **Overwrite**, the DVR continues archiving when the device drive is full by overwriting the oldest video.

When set to **Stop**, the DVR stops archiving when the device drive is full.

2. Highlight the box beside **Auto Archive** and then press \leftarrow to toggle between **On** and **Off**.

When it is **On**, the DVR archives video automatically from the time set on the Archive From field.

3. Highlight the box beside **Archive From** and then press \leftarrow to set up the archive start date and time.

4. Highlight the box beside **Working From/Working To** and then press \leftarrow to set up the time span of the automatic archive.
5. To save your changes, highlight **OK** and then press \leftarrow . Select Cancel to exit the screen without saving changes.
6. Select **Manual** to display a screen where you setup manual archive parameters.

Figure 3-56 Manual Archive Screen

Honeywell Manual Archive	
Record Info. Start	2004-07-30 04:25:54
Record Info. End	2004-08-09 23:41:07
Archive Info. Start	2004-07-30 04:25:54
Archive Info. End	2004-08-09 22:00:42
Archive Disk Usage	25% remaining
From	2004-08-09 23:33:38
To	2004-08-09 23:33:38
<input type="button" value="Archive Now"/> <input type="button" value="Cancel"/>	

7. Highlight the boxes beside **From** and **To** and then press \leftarrow to set up the archive start and stop times and dates.
8. After you set the archive start and stop parameters, highlight **Archive Now** and then press \leftarrow .
9. To end the archive process at any time, highlight **Stop** and then press \leftarrow .

Note The Stop button only displays during archiving.

Note If you have a large quantity of recorded video to archive, either stop recording or reset the recording speed. The oldest date to be archived might be overwritten if the hard disk is full.

Clip Copy

Use the Clip Copy screen (**MENU ► Configuration ► Clip Copy**) to copy video clips to an internal CD-RW drive, or external USB hard disk drive, CD-RW drive or Flash drive. The copied clip images can be viewed on computers running Microsoft Windows 98, ME, 2000 or XP. Refer to *Appendix A, USB Hard Disk Drive Preparation* for information on preparing the external drive for clip copy.

Figure 3-57 Clip Copy Screen

To select the data source to back up, highlight the first box on the top and then press **↵**. A drop-down list of available data sources displays. You can select **Local** or **Archive**.

To select the type of drive to use for clip copy, highlight the second box on the top and then press **↵**. A drop-down list of available drives displays. You can select from **IDE CD-RW**, **USB HDD**, or **USB Flash Memory**. Place a check mark in the **Audio** box to copy recorded audio with video.

Note To copy clips using the USB CD-RW, there must be two or fewer external SCSI hard drives connected to the DVR. To copy clips using the internal CD-RW drive, there must be three or fewer external SCSI hard drives connected to the DVR.

You can define how much video to copy by changing the start and end times and dates. You can also select which camera you wish to copy.

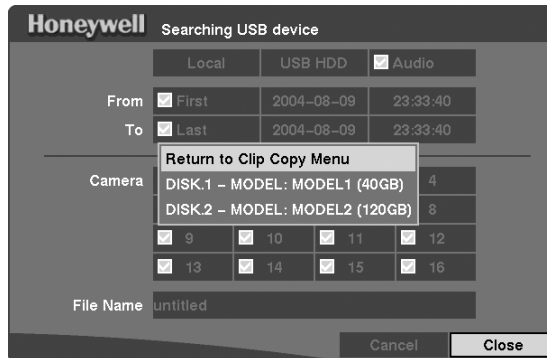
Highlight the **File Name** box and then press **↵**. A virtual keyboard displays (see *Figure 3-7*). Enter a file name for the video you are copying and select **Close**. The DVR automatically adds the camera number (for example, 01) and .exe to the file name. If you want to save the file in a specific folder, enter the folder name followed by a / (for example, *folder/filename*).

After you have given the video a file name, highlight **Start** and then press **↵** to start clip copy. When you select **IDE CD-RW** or **USB-CD-RW**, the DVR displays the drive capacity, the clip size, and asks if you want to continue.

When more than two USB hard disk drives are installed on the DVR, the following USB Device Selection screen displays.

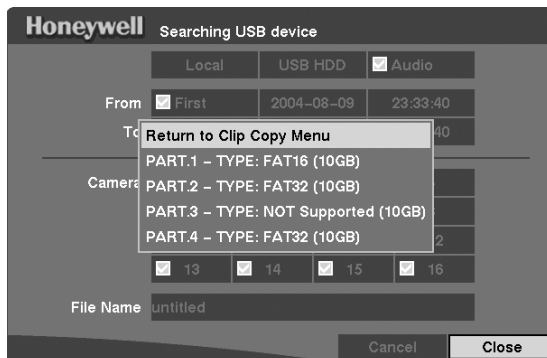
1. Select the drive to use for clip copy and then press \leftarrow .
2. Select **Return to Clip Copy Menu** and press \leftarrow to exit the screen and return to the Clip Copy screen without saving the changes.

Figure 3-58 USB Device Selection Screen



When the selected drive has more than two partitions, the following Disk Partition Selection screen displays. If the file system is not FAT16 or FAT32, the Type displays Not Supported.

Figure 3-59 Disk Partition Selection Screen



After you select the drive and partition to use for clip copy, the DVR displays the drive capacity and the clip size, and asks if you want to continue.

Note Do not copy clips larger than 2 GB.

You can use other functions on the DVR while video is being copied. To do this, highlight **Close** and then press \leftarrow . You can return to the Clip Copy screen at any time to check the progress.

Note You cannot end the clip copy process during CD burning.

Please refer to the *Remote Administration System (RAS) User Guide* for detailed information on how to review video clips.

Note During clip copy, you cannot change the system date and time, shut the system down, switch to the Quick Setup mode, clear all data, or change the system setup from a remote site.

Caution Do NOT disconnect the USB cable or the power from the external drive while copying clips. If the external drive is shut down or the USB cable is disconnected while copying clips, **the DVR system may not work normally or the external drive could be damaged**, and you will get an error message the next time you try to copy clips. You will need to power down the DVR and restart it to get rid of the error message. After the file system of the USB-IDE hard disk drive has been corrupted, this error message cannot be dismissed. Even after restarting the DVR, it may automatically restart while preparing a clip copy. You must recover the file system using the recovery program, or you must reformat the hard disk drive.

Load Default Setup

Highlighting and selecting **Load Default Setup (MENU ► Configuration ► Load Default Setup)** brings up a screen asking you if you really want to load default settings and confirm it with a password.

Note Loading the Default Setup will not change the current time, time zone, daylight saving time, and network settings.

Clear All Data

Highlighting and selecting **Clear All Data (MENU ► Configuration ► Clear All Data)** brings up a screen asking you if you really want to clear all data and to confirm it with a password.

Caution Selecting **Clear All Data** will erase all recorded video.

Operation

This chapter covers the following topics:

- Live monitoring
- Recording video
- Recording audio
- Playing recorded video
- Searching for video by date/time, calendar, and events

Note This chapter assumes you have correctly installed and configured your DVR. If you have not, please see *Chapter 2* for installation and *Chapter 3* for configuration.

The DVR controls are similar to a VCR. As with a VCR, the main functions are recording and playing back video. However, you have much greater control over recording and playing back video. You can:

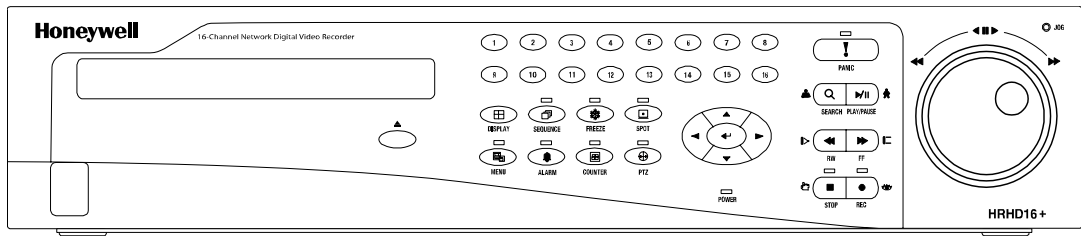
- Establish recording schedules based on time of day and day of the week
- Search through the recorded video using much more sophisticated tools than those available with VCRs

Features of your DVR that are not available with traditional VCRs are:

- Viewing video remotely
- Recording video at the same time you are watching previously recorded video

The DVR operates even when no hard disk drives are installed. In this case recording, playback, and any processes that access hard disk drives are not supported. You can only view live video and establish system settings that are not related to hard disk drive operation. Also, the unit can be connected with RAS (Remote Administration System) Watch either via Ethernet or modem.

Figure 4-1 **DVR Front Panel (16-Channel Shown)**



The front panel controls are described in *Chapter 3, Configuration*.

Turning on the Power

After you have installed the DVR following the instructions in *Chapter 2, Installation*, it is ready to record.

The DVR recovers automatically after the unit is initialized if recorded data on the storage device has been damaged.

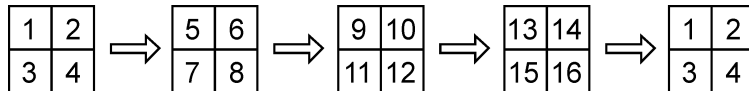
Live Monitoring

As soon as the DVR completes its initialization process, it will begin showing live video on the attached monitor and playing live audio through the attached speaker. The default mode is to display all cameras at the same time. Pressing any camera button causes that camera to display full screen. It displays live video and plays live audio until the user enters another mode.

Press **DISPLAY** to cycle the DVR through the different display formats.

You can set the DVR to display the event-detected video in full screen on the monitor during the preset dwell time when there is an Event. The video of the lowest camera number among cameras associated with the event-detected sensor displays and the DVR returns to the previous screen format after event monitoring dwell time. While the event monitoring is activated, the monitoring for all other subsequent events is ignored. Pressing any individual camera button or **DISPLAY** during event monitoring releases the current event monitoring and displays the selected camera or returns to the previous screen format.

Pressing **SEQUENCE** causes the cameras to display sequentially on the monitor. When in one of the multi-view formats, pressing this button causes the DVR to cycle through user-defined screen layouts (page sequence), or the bottom, right screen to display live cameras sequentially (cameo sequence). Selecting another display mode, or pressing **SEQUENCE** again exits the Sequence mode. When in one of the multi-view formats, pressing the Left or Right Arrow buttons causes the DVR to go to the previous or the next page. For example, if you press the Right arrow button in 2x2 format, the DVR changes the page like the one shown below.



For the sequence display on the spot monitor, press **SPOT + SEQUENCE**.

Press **FREEZE** to freeze the current image on the screen until you press the button again.

Active Cameo Mode

You can enter the Active Cameo mode by pressing \swarrow in any multi-view format. The gray-highlight box at the bottom of video indicates the active cameo, and pressing the Arrow buttons moves the active cameo. Pressing \swarrow while in the Active Cameo mode exits the Active Cameo mode. The active cameo mode will remain in effect for 15 seconds if there is no further action.

In Active Cameo mode, press the camera button of the video you want to show at active cameo. After setting the camera number at active cameo, the DVR moves the active cameo to the next cameo. You can change the screen layout using this process.

Active Cameo mode can also be used to select the camera to control Pan, Tilt and Zoom capabilities.

PIP Mode

You can display a Picture-in-Picture by pressing **DISPLAY**. You can change the location of the PIP by pressing the Up and Down Arrow buttons and its size by pressing the Left and Right Arrow buttons.

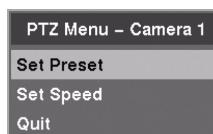
PTZ Mode

The DVR controls cameras with Pan, Tilt and Zoom capabilities. Press **PTZ** to enter the PTZ mode. You can control the camera using front panel control buttons or by setting up presets.

Control buttons	Function
Left and Right arrows	Pan left and right
Up and Down arrows	Tilt the camera up and down
SEARCH	Zoom in
PLAY/PAUSE	Zoom out
RW, FF	Focus the image

Press **STOP** in PTZ mode to display the PTZ menu.

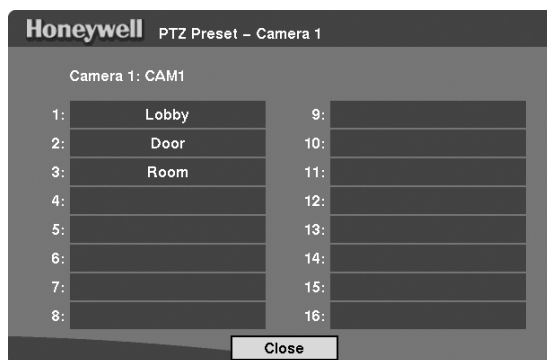
Figure 4-2 PTZ Menu



- Select **Set Preset** to set the presets for a PTZ camera.
- Select **Set Speed** to set the pan and tilt speed for a PTZ camera.
- Select **Quit** to close the menu.

You can save camera position settings as presets so that you can go directly to desired views. After you have the camera at the desired settings, press **STOP**, then select **Set Preset** in the PTZ menu.

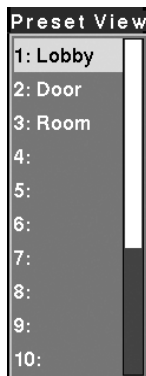
Figure 4-3 PTZ Preset Screen



1. Select the number you want to assign to the preset and then press **↵**. Use the virtual keyboard to enter the preset name.

2. Press **REC** to load the PTZ preset and the Preset View dialog box displays. Select the desired preset and press **↵** to load the preset.

Figure 4-4 Preset View Screen



To change the pan and tilt speed:

1. Select **Set Speed** in the PTZ menu and change the number from **1** to **16** using the Left and Right arrow buttons.
2. After you have selected the speed you want, press **↵**. If the camera does not support the speed control, the Set Speed menu item cannot be selected.

Recording Video

After you have installed the DVR following the instructions in *Chapter 2, Installation*, it is ready to record. The DVR starts recording when you press **REC** and continues to record until the hard disk drive is full if Record Mode - End of Disk is set to **Stop**. Or, the DVR continues recording after the hard disk drive is full if Record Mode - End of Disk is set to **Overwrite**. It does this by recording over the oldest video.

Although you will be able to record without changing the unit from its original factory settings, you will want to take advantages of the DVR's many tools. See *Chapter 3, Configuration* for detailed descriptions of the recording mode options.

Note The DVR is **not** recording if only the red LED on the **REC** button is lit. When the DVR is set for Time-lapse or Event recording, the red LED on the **REC** button indicates the unit is ready to record. A red dot appears on the monitor when the clock reaches a scheduled recording time and the DVR starts recording video.

Recording Audio

If the DVR was set up to record audio, it will record audio when video is recording.

Note Make certain you comply with all local and federal laws and regulations when recording audio.

Playing Recorded Video

After video has been recorded, you can view it by pressing **PLAY/PAUSE**. When playing video for the first time, the DVR displays the most recent image. When playing video subsequent times, the DVR starts playing video from the last recalled image.

Note Only the administrator level user can view the covert cameras. The covert cameras in the playback mode are determined by the current camera setting.

To freeze the video on the screen, press **PLAY/PAUSE** again.

RW (Rewind) Button

To play video backward at high speed, press **RW**. Pressing the button again toggles the playback speed from ◀, ◀◀, and ◀◀◀. The screen displays ◀, ◀◀, and ◀◀◀ respectively.

Entering Fast Backward Playback mode from Live Monitoring mode can be password protected.

FF (Fast Forward) Button

To play video forward at high speed, press **FF**. Pressing the button again toggles the playback speed from: ▶, ▶▶, and ▶▶▶. The screen displays ▶, ▶▶, and ▶▶▶ respectively.

Entering Fast Playback mode from Live Monitoring mode can be password protected.

STOP Button

Press **STOP** while in Playback mode to return the DVR to the Live Monitoring mode.

Camera Buttons (1 to 16)

Press a camera button to display that camera at full screen.

DISPLAY Button

Press **DISPLAY** to cycle the display through the different screen layouts. The display modes are: full, 4x4, 3x3, 2x2, and PIP (Picture-in-Picture).

Menu Button

Press and hold **Menu** while in Playback mode to enter the Clip Copy screen (see “Clip Copy” on page 77).

Shuttle Ring

The Shuttle Ring only functions in Playback mode. Use the Shuttle Ring to play video forward. Turn the ring counterclockwise to play video backward. Playback speed varies with the amount the ring is turned. The playback speeds are: ◀x0.5, ◀◀, ◀◀◀, ◀◀◀◀, ▶x0.5, ▶▶, ▶▶▶, ▶▶▶▶.

When you release the ring, it snaps back to the center position and the video pauses.

Jog Dial

The Jog Dial only functions when playback video has been paused. Turn the Jog Dial clockwise to play video forward image-by-image. Turn the Jog Dial counterclockwise to play video backward image-by-image.

Note When playing recorded video at maximum speed with very high image quality, playback of recorded audio may be interrupted occasionally.

Note You cannot change the system setup from a remote site during Playback mode.

Searching Video

Press **SEARCH** to display the Search Menu.

Figure 4-5 Search Menu

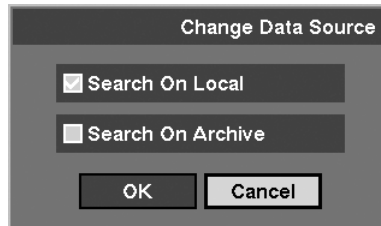


Option	Function
Change Data Source	Changes the data source to be searched (see <i>Change Data Source</i> for more details)
Go to First	Displays the first recorded image
Go to Last	Displays the last recorded image
Date/Time Search ...	Searches by date and time (see <i>Date/Time Search</i> for more details)
Calendar Search ...	Searches using a calendar (see <i>Calendar Search</i> for more details)
Event Search ...	Selects video from the event log (see <i>Event Search</i> for more details)
Clip Copy ...	Clips a video segment and saves it.

Note The searching speed might decrease when all camera channels are in the pre-alarm recording mode.

Change Data Source

Figure 4-6 Change Data Source Screen



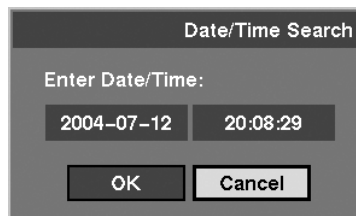
You can select the data source to be searched from:

- Local storage (Search On Local)
- Archive storage (Search On Archive)

To select the data source, highlight the desired source location and then press \leftarrow .

Date/Time Search

Figure 4-7 Date/Time Search Screen



1. Move the cursor over the date and then press \leftarrow .

You can use the Left and Right Arrow buttons to highlight the year, month and day.

Use the Up and Down Arrow buttons to change to the date you want to search for video. After you have set the date you want, press \leftarrow .

2. Move the cursor over the time and then press \leftarrow .

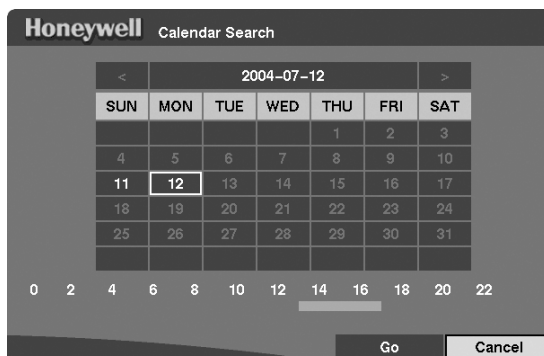
You can use the Left and Right Arrow buttons to highlight the hour, minutes and seconds.

Use the Up and Down Arrow buttons to change to the time you want to search for video. After you have entered the time you want, press \leftarrow .

3. After you have set the date and time you want to search, highlight **OK** and then press \leftarrow . The selected date and time displays. (If no video was recorded at the selected time, you will see a blank screen.)
4. You can now use the **PLAY/PAUSE**, **RW**, **FF**, Jog Dial, and Shuttle Ring controls to review the surrounding video.

Calendar Search

Figure 4-8 **Calendar Search Screen**



1. Days with recorded video display on the calendar with white numbers. You can highlight the days with recorded video by using the Arrow buttons. After you have highlighted a day, press \leftarrow to select it.
2. A time bar displays at the bottom of the calendar. Hours in which video was recorded will be highlighted with blue.

Use the Up and Down Arrow buttons to highlight the time bar. After the time bar is highlighted, select the time by using the Left and Right Arrow buttons.

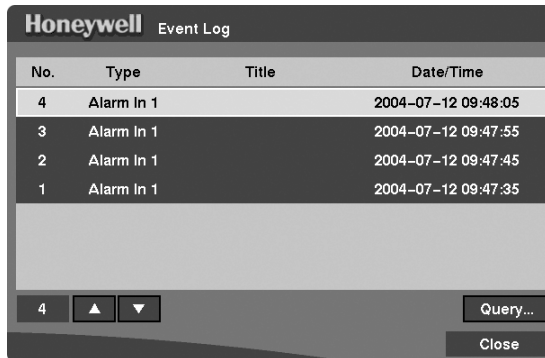
Note The time bar is in one-hour segments. If a segment is highlighted, it means that some video was recorded during that hour. However, it does NOT mean video was recorded for the entire hour.

3. After you have set the date and time you want to search, highlight **GO** and then press \leftarrow . The selected date and time displays.
4. You can now use the **PLAY/PAUSE**, **RW**, **FF**, Jog Dial and Shuttle Ring controls to review the surrounding video.

Event Search

The DVR maintains a log of each time the Alarm Input port is activated. The Event Log screen displays this list.

Figure 4-9 Event Log Screen



1. Use the Arrow buttons to highlight the event for which you would like to see video.

Note Event Search does not work when the data source is set to **Search on Archive**.

2. Press **↵** to extract the event video and display the first image of the event.
3. Press **PLAY/PAUSE** to start playing the event video segment.

Press **STOP** to return to live monitoring.

Press **SEARCH** to return to the Event Log.

You can also narrow your event search by selecting **Query...** and setting up the new search condition.

Figure 4-10 Event Search (by Camera) Screen



Figure 4-11 Event Search (by Event) Screen

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Alarm In	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Motion	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Video Loss	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

1. Highlight the box beside **Search by** and then press \leftarrow to toggle between Camera and Event.

You can search video from the first to last recorded images, or you can set the start and stop times and dates.

When you select **Search by Camera**, select the target cameras and event options.

When you select **Search by Event**, select event options for each device.

2. After you set your desired search conditions, highlight **Search** and then press \leftarrow to display the search results in the Event Log screen. Select **Cancel** to exit the screen without saving the changes.

USB Hard Disk Drive Preparation

This appendix covers how to prepare the USB-IDE hard disk drive for computers using either Windows 2000 or Windows 98 operating systems.

Preparing The USB-IDE Hard Disk Drive In Windows 2000

Note Preparing a USB-IDE hard disk drive under Windows XP is almost identical to Windows 2000.

1. Connect the USB-IDE hard disk drive to your computer using the USB cable.
2. Turn on your computer.
3. The USB device icon should display on the Taskbar.
4. If the USB-IDE hard disk drive is partitioned or has data, it will show up in **My Computer** as a hard disk drive icon. Check the file system by right clicking on the icon and checking under **Properties ► General ► File System**. If the file system is **not** FAT32 format, format the USB-IDE hard disk drive using the FAT32 format.
5. If the USB-IDE hard disk drive is not partitioned, go to **Administrative Tools** in **Control Panel** and start **Computer Management**. Open **Disk Management** in **Storage** and right click an unallocated region of the USB-IDE hard disk drive. Then, click **Create Partition**.
6. In the Create Partition wizard, click **Next**, then **Primary Partition**, and follow the instructions on the screen. Make sure that FAT32 is selected for the file system.

Note The partition size should be less than 32 GB because of Windows OS limitations.

After formatting is complete, the USB-IDE hard disk drive will be added to **My Computer**.

7. Connect the USB-IDE hard disk drive to the DVR.

Preparing The USB-IDE Hard Disk Drive In Windows 98

Note Preparing a USB-IDE hard disk drive under Windows ME is almost identical to Windows 98.

1. Connect the USB-IDE hard disk drive to your computer using the USB Cable.
2. Turn on your computer. The Add New Hardware wizard window displays.
3. Install the device driver for the USB backup device following the instructions provided with your USB hard disk drive.
4. If the USB-IDE hard disk drive is partitioned or contains data, it will show up in My Computer as a hard disk drive icon. Check the file system in **Properties ► General ► File System**. If the file system is **not** FAT32 format, format the USB-IDE hard disk drive with FAT32 format.
5. Run the FDISK utility by clicking **Start** then **RUN**. Type **fdisk** and then click **OK**.
6. At the MS-DOS command prompt, type **Y** and click **↵** Enter on the keyboard.
7. In the FDISK Option menu, select **5. Change current fixed disk drive**.
8. Select the appropriate letter corresponding to the USB-IDE hard disk drive.
9. In the FDISK Option menu, select **1. Create DOS partition or Logical DOS Drive**.
10. In the Create DOS Partition or Logical DOS Drive menu, select **1. Create Primary DOS Partition**. Type **Y** to use all available space and click **↵** Enter. Click **ESC** to exit the screen after the USB-IDE hard disk drive partition is created.
11. Restart your computer and verify the newly created drive is in **My Computer**.
12. Right click the newly created hard disk drive icon and select **Format**.
13. In the Format Screen, select **Full** as the **Format type** and click **Start**.
14. After formatting is complete, connect the USB-IDE hard disk drive to the DVR.

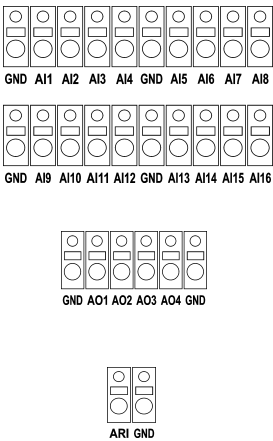
Solutions

This appendix provides solutions to common technical issues.

Problem	Possible Solution
No power	<ul style="list-style-type: none">• Check power cord connections.• Confirm that there is power at the outlet
No live video	<ul style="list-style-type: none">• Check camera video cable and connections.• Check monitor video cable and connections.• Confirm that the camera has power• Check camera lens settings
Live video extremely bright	If a cable is attached to the "Loop" connector, make certain it is connected to a properly terminated device.
REC LED is lit but DVR is not recording	Unit only records video based on the parameters such as schedule and events defined during configuration. Red REC LED indicates the DVR is ready to record.
DVR stops recording	If the hard disk drive is full, you need to either delete video or set the DVR to the Overwrite Mode.
DVR displays an error message that the last recorded image date and time is later than the current date and time setting of the DVR	<p>The DVR automatically resets the time and date of the unit, according to the time and date of the last recorded image.</p> <p>If this is not the correct time and date, reset the time and date manually.</p> <p>If the correct time and date is earlier than the last recorded image, any video with a later time and date will be lost when resetting the correct time and date.</p>

Connector Pinouts

I/O Connector Pinouts



AI (1 to 16)	Alarm Inputs 1 to 16
GND	Chassis Ground (4 connectors)
AO (1 to 4)	Alarm Outputs 1 to 4
ARI	Alarm Reset In

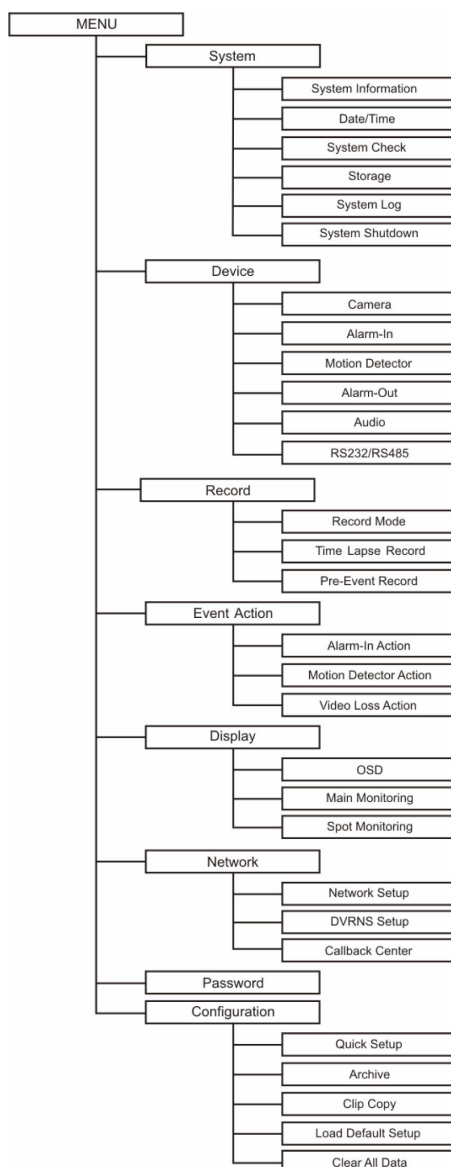
RS485 Connector Pinouts



	Master unit	Slave unit
RX	-	+
TX	-	+

Map of Screens

Figure D-1 Screen Map



Specifications

Table E-1 Technical Specifications

Video	
Signal Format:	NTSC or PAL
Video Input:	Composite: 4, 9 or 16 looping inputs, 1 Vp-p, auto-terminating, 75 Ohms
Monitor Outputs:	Composite: One, 1 Vp-p, 75 Ohms, SVHS: One, SPOT: 1 BNC
Video Resolution:	720 x 480 (NTSC) 720 x 576 (PAL)
Playback/Record Speed (images per second):	<u>Standard Resolution:</u> 60/60 ips (NTSC), 50/50 ips (PAL) <u>High Resolution:</u> 30/30 ips (NTSC), 25/25 ips (PAL)
Inputs, Outputs	
Alarm Input:	4, 9, or 16 TTL, programmable as NC/NO
Alarm Output:	4 TTL Open Connector, 5 mA @ 12V, 30 mA @ 5V
Alarm Reset Input:	1 TTL
Network Connectivity	10/100 Mbps Ethernet RS232C for external modem
Audio Input:	RCA Input: One line in or mic, programmable
Audio Output:	One, line
Connectors	
Video Input:	Composite: 4, 9 or 16 BNC
Video Loop:	Composite: 4, 9, or 16 BNC
Monitor Output:	Composite: 1 BNC SVHS: 1 Y/C SPOT: 1 BNC
Audio In:	RCA connector
Audio Out:	RCA connector

Table E-1 Technical Specifications

Alarms:	Terminal block
Ethernet Port:	RJ45
RS232C Serial Port:	DB9 (P)
RS485 Serial Port:	Two connector terminal block
Ultra Wide SCSI Port:	High density female 68-pin connector
USB Port	Two (2)
Storage	
Primary Storage:	EIDE hard disk drive (up to 2)
Backup Storage:	Ultra Wide SCSI hard disk drive (RAID) Built-in CD-RW drive USB hard disk drive, CD-RW drive, or Flash drive
General	
Dimensions: (W x H x D)	16.9 in. x 3.5 in. x 15.9 in. (430 mm x 88 mm x 405 mm)
Shipping Dimensions: (W x H x D)	21.3 in. x 11.4 in. x 23.2 in. (540 mm x 290 mm x 500 mm)
Unit Weight:	17.98 lb. (8.16 kg)
Shipping Weight:	26.60 lb. (12.07 kg)
Operating Temperature:	41°F ~ 104°F (5°C ~ 40°C)
Operating Humidity:	0% ~ 90%
Power:	100 to 240 VAC, 1/2 A, 60/50 Hz
Input Voltage:	24 VDC, 6.3 A (Adapter)
Power Consumption:	Max 90W
Approvals:	FCC, CE
Note Specifications are subject to change without notice.	

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